

Access DB# 128102  
87

# SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Norman Wright Examiner #: 71542 Date: 7/26/04  
Art Unit: 2134 Phone Number 30 5275K6 Serial Number: 09/527971  
Mail Box and Bldg/Room Location: 4A37 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: 1994/01/04 ; or at least May 16, 1996

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for:

a watermark/digital image that uses frequency/  
spectrum or error - noise to pre-filter data (watermark.)

## STAFF USE ONLY

### Type of Search

### Vendors and cost where applicable

Searcher: Goffrey St. Leger NA Sequence (#) \_\_\_\_\_ STN \_\_\_\_\_  
Searcher Phone #: 308-7800 AA Sequence (#) \_\_\_\_\_ Dialog /  
Searcher Location: 4B30 Structure (#) \_\_\_\_\_ Questel/Orbit \_\_\_\_\_  
Date Searcher Picked Up: 7/28/4 Bibliographic / Dr. Link \_\_\_\_\_  
Date Completed: 7/29/4 Litigation \_\_\_\_\_ Lexis/Nexis \_\_\_\_\_  
Searcher Prep & Review Time: 40 Fulltext / Sequence Systems \_\_\_\_\_  
Clerical Prep Time: \_\_\_\_\_ Patent Family \_\_\_\_\_ WWW/Internet \_\_\_\_\_  
Online Time: 255 Other \_\_\_\_\_ Other (specify) \_\_\_\_\_



# STIC Search Report

## EIC 2100

STIC Database Tracking Number: 128102

TO: Norman M Wright  
Location: 4A37  
Art Unit : 2134  
Thursday, July 29, 2004

Case Serial Number:

From: Geoffrey St. Leger  
Location: EIC 2100  
PK2-4B30  
Phone: 308-7800

[geoffrey.stleger@uspto.gov](mailto:geoffrey.stleger@uspto.gov)

### Search Notes

Dear Examiner Wright,

Attached please find the results of your search request for application . I searched Dialog's foreign patent files, technical databases, product announcement files and general files; along with the Internet.

Please let me know if you have any questions.

Regards,



Geoffrey St. Leger  
4B30/308-7800

File 8: Ei Compendex(R) 1970-2004/Jul W3  
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 File 248: PIRA 1975-2004/Jul W3  
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| Set | Items  | Description   |
|-----|--------|---|
| S1  | 15435  | WATERMARK??? OR WATER()MARK???? OR (ELECTRONIC OR DIGITAL)-(1W)(MARK? ? OR MARKING? ?) OR STEGANOGRAPH? |
| S2  | 50302  | PREFILTER? OR PREPROCESS??? OR PRE()(FILTER??? OR PROCESS?--??)   |
| S3  | 4166   | S2(10N)(FREQUENC??? OR SPECTRUM? ? OR ERROR? ? OR NOISE)  |
| S4  | 160768 | (FILTER??? OR WHITEN???) (10N)(FREQUENC??? OR SPECTRUM? ? OR ERROR? ? OR NOISE)                         |
| S5  | 4      | S1 AND S3   |
| S6  | 100    | S1 AND S2   |
| S7  | 3      | S6 NOT PY=1997:2004   |
| S8  | 345    | S1 AND S4   |
| S9  | 13     | S8 NOT PY=1997:2004   |
| S10 | 139440 | (FREQUENC???) (5N)(SPECTRUM OR NOISE OR ERROR? ?)   |
| S11 | 95     | S1 AND S10  |
| S12 | 0      | S11 NOT PY=1997:2004  |
| S13 | 19     | S5 OR S7 OR S9  |
| S14 | 15     | RD (unique items)   |
| S15 | 79222  | (DIGITAL OR DIGITIZED OR DIGITISED)(1W)(IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ?)            |
| S16 | 100    | S3 AND S15  |
| S17 | 57     | S16 NOT PY=1997:2004  |
| S18 | 48     | RD (unique items)   |
| S19 | 5      | S10 AND S18   |
| S20 | 8      | S10(7N)S2(7N)IMAGE? ?   |
| S21 | 4      | RD (unique items)   |
| S22 | 2      | S21 NOT (S9 OR S14 OR S19)  |
| S23 | 14966  | AU=(RHOADS, G? OR ALATTAR, A? OR SHARMA, R? OR RHOADS G? OR ALATTAR A? OR SHARMA R?)                    |
| S24 | 31     | S1 AND S23  |
| S25 | 0      | S24 NOT PY=1998:2004  |

14/5/1 (Item 1 from file: 8)  
DIALOG(R)File 8:Ei Compendex(R)  
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06304904 E.I. No: EIP03097371817

**Title:** Using ill-posed matrix in correlation-based digital watermarking  
**Author:** Liang, Lei; Xu, Xiaohang  
**Corporate Source:** Dept of ECE University of Massachusetts-Amherst, Amherst, MA 01003, United States  
**Conference Title:** Multimedia systems and Applications V  
**Conference Location:** Boston, MA, United States **Conference Date:** 20020729-20020730  
**Sponsor:** SPIE  
**E.I. Conference No.:** 60718  
**Source:** Proceedings of SPIE - The International Society for Optical Engineering v 4861 2002. p 183-191  
**Publication Year:** 2002  
**CODEN:** PSISDG **ISSN:** 0277-786X  
**Language:** English  
**Document Type:** CA; (Conference Article) **Treatment:** T; (Theoretical)  
**Journal Announcement:** 0303W1

**Abstract:** One of the straightforward ways to add a **watermark** to an image in the spatial domain is to add a pseudo-random noise pattern to the original image. The noise pattern can be generated based on a seed. To detect the **watermark** in an image, the image is correlated with the noise pattern and the correlation is compared to a preset threshold. Important considerations of the above mentioned correlation-based **watermarking** techniques are the probability of correct detection and the probability of false alarm. In this paper, we present a method of using "ill-posed" operator to **pre - process** the **noise** pattern. The **watermark** is obtained by pre-multiplying a noise pattern by the inverse of an "ill-posed" operator. An "ill-posed" operator has a large conditional number, i.e., the ratio of the largest singular value to the smallest singular value. Because of the large conditional number, the inverse of an "ill-posed" operator has a large change in the output when the input changes slightly. In **watermarking**, the "ill-posedness" can be exploited to improve the performance of correlation-based **watermarking** because of the pseudo-random patterns generated by different seeds have very low correlation with each other and this feature is amplified by the inverse of the "ill-posed" operator. The "ill-posed" operator can be obtained from a wide range of fields such as heat profusion, acoustic wave propagation, and Laplacian equation. Compared with the standard correlation-based **watermark**, the new **watermark** has smaller payload and approximately the same probability of correct detection. In addition the new **watermark** has much lower probability of false alarm. In the paper, we describe the "ill-posed" operator in details and use examples to demonstrate the performance of the **watermark**. 9 Refs.

**Descriptors:** Digital **watermarking**; Cryptography; Correlation theory; Probability; Algorithms; Error detection; Image processing; Signal to noise ratio

**Identifiers:** Correlation-based digital **watermarking**; Ill-posedness; Pseudo-random noise pattern

**Classification Codes:**

723.2 (Data Processing); 716.1 (Information & Communication Theory); 922.1 (Probability Theory); 723.1 (Computer Programming); 721.1 (Computer Theory (Includes Formal Logic, Automata Theory, Switching Theory & Programming Theory))  
723 (Computer Software, Data Handling & Applications); 716 (Electronic Equipment, Radar, Radio & Television); 922 (Statistical Methods); 721 (Computer Circuits & Logic Elements)  
72 (COMPUTERS & DATA PROCESSING); 71 (ELECTRONICS & COMMUNICATION ENGINEERING); 92 (ENGINEERING MATHEMATICS)

14/5/2 (Item 2 from file: 8)  
DIALOG(R)File 8:Ei Compendex(R)  
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04608967 E.I. No: EIP97013499385

**Title: Phase watermarking of digital images**

Author: O'Ruanaidh, J.J.K.; Dowling, W.J.; Boland, F.M.

Corporate Source: Univ of Dublin, Dublin, Irel

Conference Title: Proceedings of the 1996 IEEE International Conference in Image Processing, ICIP'96. Part 3 (of 3)

Conference Location: Lausanne, Switz Conference Date: 19960916-19960919  
Sponsor: IEEE

E.I. Conference No.: 45905

Source: IEEE International Conference on Image Processing v 3 1996. IEEE, Los Alamitos, CA, USA, 96CH35919. p 239-242

Publication Year: 1996

CODEN: 85QTAW

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 9703W3

Abstract: A **watermark** is an invisible mark placed on an image that can be detected when the image is compared with the original. This mark is designed to identify both the source of an image as well as its intended recipient. The mark should be tolerant to reasonable quality lossy compression of the image using transform coding or vector quantization. Standard image processing operations such as low pass **filtering**, cropping, translation and rescaling should not remove the mark. Spread **spectrum** communication techniques and matrix transformations can be used together to design **watermarks** that are robust to tampering and are visually imperceptible. This paper discusses techniques for embedding such marks in grey scale digital images. It also proposes a novel phase based method of conveying the **watermark** information. In addition, the use of optimal detectors for **watermark** identification is also proposed. (Author abstract) 13 Refs.

Descriptors: Image processing; Copyrights; Image compression; Image coding; Vector quantization; Standards; Signal **filtering** and prediction; Spread **spectrum** communication; Matrix algebra; Fourier transforms

Identifiers: **Watermarking**; Transform coding; Low pass filtering; Cropping; Translation; Rescaling; Discrete Fourier transform

Classification Codes:

723.2 (Data Processing); 902.3 (Legal Aspects); 902.2 (Codes & Standards); 716.1 (Information & Communication Theory); 716.3 (Radio Systems & Equipment)

723 (Computer Software); 741 (Optics & Optical Devices); 902 (Engineering Graphics & Standards); 716 (Radar, Radio & TV Electronic Equipment)

72 (COMPUTERS & DATA PROCESSING); 74 (OPTICAL TECHNOLOGY); 90 (GENERAL ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS)

14/5/3 (Item 3 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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04608960 E.I. No: EIP97013499378

**Title: Transparent robust image watermarking**

Author: Swanson, Mitchell D.; Zhu, Bin; Tewfik, Ahmed H.

Corporate Source: Univ of Minnesota, Minneapolis, MN, USA

Conference Title: Proceedings of the 1996 IEEE International Conference in Image Processing, ICIP'96. Part 3 (of 3)

Conference Location: Lausanne, Switz Conference Date: 19960916-19960919  
Sponsor: IEEE

E.I. Conference No.: 45905

Source: IEEE International Conference on Image Processing v 3 1996. IEEE, Los Alamitos, CA, USA, 96CH35919. p 211-214

Publication Year: 1996

CODEN: 85QTAW

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical)

Journal Announcement: 9703W3

Abstract: We propose a **watermarking** scheme to hide copyright information in an image. The scheme employs visual masking to guarantee

that the embedded **watermark** is invisible and to maximize the robustness of the hidden data. The **watermark** is constructed for arbitrary image blocks by **filtering** a pseudo- **noise** sequence (author id) with a **filter** that approximates the **frequency** masking characteristics of the visual system. The noise-like **watermark** is statistically invisible to deter unauthorized removal. Experimental results show that the **watermark** is robust to several distortions including white and colored noises, JPEG coding at different qualities, and cropping. (Author abstract) 12 Refs.

Descriptors: Image processing; Copyrights; Signal **filtering** and prediction; Spurious signal **noise** ; Statistical methods; Image coding

Identifiers: Image **watermarking** ; Visual masking; JPEG coding; Least significant bits

Classification Codes:

723.2 (Data Processing); 902.3 (Legal Aspects); 716.1 (Information & Communication Theory); 922.2 (Mathematical Statistics)

723 (Computer Software); 741 (Optics & Optical Devices); 902 (Engineering Graphics & Standards); 716 (Radar, Radio & TV Electronic Equipment); 922 (Statistical Methods)

72 (COMPUTERS & DATA PROCESSING); 74 (OPTICAL TECHNOLOGY); 90 (GENERAL ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS); 92 (ENGINEERING MATHEMATICS)

14/5/4 (Item 4 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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04485257 E.I. No: EIP96083301130

**Title: Digital watermarks for audio signals**

Author: Boney, Laurence; Tewfik, Ahmed H.; Hamdy, Khaled N.

Corporate Source: Univ of Minnesota, Minneapolis, MN, USA

Conference Title: Proceedings of the 1996 International Conference on Multimedia Computing and Systems

Conference Location: Hiroshima, Jpn Conference Date: 19960617-19960623

Sponsor: IEEE

E.I. Conference No.: 45240

Source: International Conference on Multimedia Computing and Systems-Proceedings 1996. IEEE, Los Alamitos, CA, USA. p 473-480

Publication Year: 1996

CODEN: 002114

Language: English

Document Type: CA; (Conference Article) Treatment: A; (Applications); G ; (General Review)

Journal Announcement: 9610W4

Abstract: In this paper, we present a novel technique for embedding digital **'watermarks'** into digital audio signals. **Watermarking** is a technique used to label digital media by hiding copyright or other information into the underlying data. The **watermark** must be imperceptible or undetectable by the user and should be robust to attacks and other types of distortion. In our method, the **watermark** is generated by **filtering** a PN-sequence with a **filter** that approximates the **frequency** masking characteristics of the human auditory system. It is then weighted in the time domain to account for temporal masking. We discuss the detection of the **watermark** and assess the robustness of our **watermarking** approach to attacks and various signal manipulations. (Author abstract) 25 Refs.

Descriptors: \*Digital signal processing; Acoustic signal processing; Signal filtering and prediction; Security of data; Signal detection

Identifiers: Digital **watermarks** ; Audio signals; Temporal masking

Classification Codes:

716.1 (Information & Communication Theory); 723.2 (Data Processing)

716 (Radar, Radio & TV Electronic Equipment); 751 (Acoustics); 723 (Computer Software)

71 (ELECTRONICS & COMMUNICATIONS); 75 (ACOUSTICAL TECHNOLOGY); 72 (COMPUTERS & DATA PROCESSING)

14/5/5 (Item 5 from file: 8)

DIALOG(R) File 8: Ei Compendex(R)

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04101771 E.I. No: EIP95022595091

**Title:** Digital watermark

**Author:** van Schyndel, R.G.; Tirkel, A.Z.; Osborne, C.F.

**Corporate Source:** Monash Univ, Clayton, Aust

**Conference Title:** Proceedings of the 1994 1st IEEE International Conference on Image Processing. Part 2 (of 3)

**Conference Location:** Austin, TX, USA **Conference Date:** 19941113-19941116

**Sponsor:** IEEE

**E.I. Conference No.:** 42570

**Source:** IEEE International Conference on Image Processing v 1 1994. IEEE, Los Alamitos, CA, USA, 94CH35708. p 86-90

**Publication Year:** 1994

**CODEN:** 001953

**Language:** English

**Document Type:** CA; (Conference Article) **Treatment:** A; (Applications)

**Journal Announcement:** 9505W1

**Abstract:** This paper discusses the feasibility of coding an 'undetectable' **digital water mark** on a standard 512\*\*512 intensity image with an 8 bit gray scale. The **watermark** is capable of carrying such information as authentication or authorisation codes, or a legend essential for image interpretation. This capability is envisaged to find application in image tagging, copyright enforcement, counterfeit protection, and controlled access. Two methods of implementation are discussed. The first is based on bit plane manipulation of the LSB, which offers easy and rapid decoding. The second method utilises linear addition of the **water mark** to the image data, and is more difficult to decode, offering inherent security. This linearity property also allows some image processing, such as averaging, to take place on the image, without corrupting the **water mark** beyond recovery. Either method is potentially compatible with JPEG and MPEG processing. (Author abstract) 12 Refs.

**Descriptors:** Image coding; Image understanding; Copyrights; Decoding; Security of data; Color; Adaptive **filtering** ; Spurious signal **noise** ; Imaging systems

**Identifiers:** Digital **watermark** ; Authentication; Image tagging; Copyright enforcement; Counterfeit protection; Controlled access; Matched filtering; Message extraction; Fibonacci recursion relation; Autocorrelation functions

**Classification Codes:**

723.2 (Data Processing); 902.2 (Codes & Standards); 716.1 (Information & Communication Theory); 741.1 (Light/Optics); 741.3 (Optical Devices & Systems)

723 (Computer Software); 902 (Engineering Graphics & Standards); 716 (Radar, Radio & TV Electronic Equipment); 741 (Optics & Optical Devices)

72 (COMPUTERS & DATA PROCESSING); 90 (GENERAL ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS); 74 (OPTICAL TECHNOLOGY)

14/5/6 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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7948148 INSPEC Abstract Number: B2004-06-6135C-075, C2004-06-5260B-112

**Title:** Colour image watermarking in the complex wavelet domain

**Author(s):** Bouridane, A.; Kurugollu, F.; Beggs, R.; Boussakta, S.

**Author Affiliation:** Dept. of Comput. Sci., Queen's Univ., Belfast, UK

**Conference Title:** Proceedings of the 2003 10th IEEE International Conference on Electronics, Circuits, and Systems (IEEE Cat. No.03EX749) Part Vol.3 p.1196-9 Vol.3

**Publisher:** IEEE, Piscataway, NJ, USA

**Country of Publication:** USA lii+1339 pp.

**ISBN:** 0 7803 8163 7 **Material Identity Number:** XX-2004-00925

**U.S. Copyright Clearance Center Code:** 0-7803-8163-7/03/\$17.00

**Conference Title:** Proceedings of the 2003 10th IEEE International Conference on Electronics, Circuits, and Systems

**Conference Sponsor:** IEEE; IEEE Circuits and Syst. Soc.; Univ. of Sharjah; Etisalat College of Eng.; Emirates Telecommunications Corp

Conference Date: 14-17 Dec. 2003      Conference Location: Sharjah, United Arab Emirates

Language: English      Document Type: Conference Paper (PA)

Treatment: Experimental (X)

Abstract: Digital image **watermarking** has become a very active research area. One key requirement in designing a **watermarking** system is that there should be no perceptible difference between the **watermarked** and original image, and the **watermark** should be difficult to remove or alter without damaging the host image. However, these two somewhat different requirements are usually closely related. This paper is concerned with an investigation of different methods to increase imperceptibility and robustness of colour **watermarks** embedded in colour host images using the Complex Wavelet Transform (CWT). The Complex Wavelet Transform was chosen because experimentation results from have shown the CWT to be more robust than other transforms under compression, additive **noise**, median and mean **filtering** attacks. Fusion based **watermarking** has been chosen since it provides a visual authentication of the **watermark**. (8 Refs)

Subfile: B C

Descriptors: image coding; image colour analysis; sensor fusion; transform coding; **watermarking**; wavelet transforms

Identifiers: colour image **watermarking**; complex wavelet domain; digital image **watermarking**; imperceptibility; **watermarking** robustness; complex wavelet transform; additive noise; fusion based **watermarking**; visual authentication

Class Codes: B6135C (Image and video coding); B0290X (Integral transforms in numerical analysis); C5260B (Computer vision and image processing techniques); C6130S (Data security); C4188 (Integral transforms in numerical analysis)

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14/5/7      (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

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7948072      INSPEC Abstract Number: B2004-06-6135C-071, C2004-06-5260B-110

**Title: Blind image-adaptive watermarking**

Author(s): Karybali, I.; Berberidis, K.

Author Affiliation: Dept. of Comput. Eng. & Informatics, Univ. of Patras, Rio-Patras, Greece

Conference Title: Proceedings of the 2003 10th IEEE International Conference on Electronics, Circuits, and Systems (IEEE Cat. No.03EX749)

Part Vol.2      p.894-7 Vol.2

Publisher: IEEE, Piscataway, NJ, USA

Country of Publication: USA      lli+1339 pp.

ISBN: 0 7803 8163 7      Material Identity Number: XX-2004-00924

U.S. Copyright Clearance Center Code: 0-7803-8163-7/03/\$17.00

Conference Title: Proceedings of the 2003 10th IEEE International Conference on Electronics, Circuits, and Systems

Conference Sponsor: IEEE; IEEE Circuits and Syst. Soc.; Univ. of Sharjah; Etisalat College of Eng.; Emirates Telecommunications Corp

Conference Date: 14-17 Dec. 2003      Conference Location: Sharjah, United Arab Emirates

Language: English      Document Type: Conference Paper (PA)

Treatment: Experimental (X)

Abstract: In this paper a new blind image-adaptive **watermarking** technique is proposed. The main contributions in this work are the following. First, a new spatial mask taking into account the Human Visual System (HVS) properties, is proposed. The mask is constructed based on the local variance of the cover image prediction error sequence. Second, an improved detection scheme has been developed, which is blind, in the sense that no knowledge concerning the cover image is required. The similarity measure used in the detector is the normalized correlation between the reproduced **watermark** and the prediction error of the **watermarked** and possibly attacked image (instead of the image itself). Due to the above modifications the proposed technique exhibits superior performance as compared to the conventional HVS-based blind adaptive **watermarking**. This performance improvement has been justified theoretically and verified



through extensive simulations. In particular, the proposed technique is robust to additive white **noise**, JPEG and Wavelet compression, **filtering** etc. (7 Refs)

Subfile: B C

Descriptors: correlation methods; filtering theory; image coding; prediction theory; **watermarking**

Identifiers: blind image-adaptive **watermarking**; spatial mask; human visual system properties; local variance; cover image prediction error sequence; similarity measure; normalized correlation; additive white noise; copyright protection; prediction **error filter**; cost function; autocorrelation matrix; cross-correlation vector

Class Codes: B6135C (Image and video coding); B6140B (Filtering methods in signal processing); C5260B (Computer vision and image processing techniques); C6130S (Data security)

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14/5/8 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

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7593071 INSPEC Abstract Number: B2003-05-6135C-127, C2003-05-5260B-335

Title: Use of ill-posed operator in correlation-based watermarking

Author(s): Lei Liang; Xiaohang Xu

Author Affiliation: Dept. of Electr. & Comput. Eng., Massachusetts Univ., Amherst, MA, USA

Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.4861 p.183-91

Publisher: SPIE-Int. Soc. Opt. Eng,

Publication Date: 2002 Country of Publication: USA

CODEN: PSISDG ISSN: 0277-786X

SICI: 0277-786X(2002)4861L:183:POCB;1-T

Material Identity Number: C574-2003-009

U.S. Copyright Clearance Center Code: 0277-786X/02/\$15.00

Conference Title: Multimedia Systems and Applications V

Conference Date: 29-30 July 2002 Conference Location: Boston, MA, USA

Language: English Document Type: Conference Paper (PA); Journal Paper (JP)

Treatment: Theoretical (T); Experimental (X)

Abstract: One of the straightforward ways to add a **watermark** to an image in the spatial domain is to add a pseudo-random noise pattern to the original image. The noise pattern can be generated based on a seed. To detect the **watermark** in an image, the image is correlated with the noise pattern and the correlation is compared to a preset threshold. Important considerations of the above mentioned correlation-based **watermarking** techniques are the probability of correct detection and the probability of false alarm. We present a method of using an "ill-posed" operator to **pre-process** the **noise** pattern. The **watermark** is obtained by pre-multiplying a noise pattern by the inverse of an "ill-posed" operator. An "ill-posed" operator has a large conditional number, i.e., the ratio of the largest singular value to the smallest singular value. Because of the large conditional number, the inverse of an "ill-posed" operator has a large change in the output when the input changes slightly. In **watermarking**, the "ill-posedness" can be exploited to improve the performance of correlation-based **watermarking** because of the pseudo-random patterns generated by different seeds have very low correlation with each other and this feature is amplified by the inverse of the "ill-posed" operator. The "ill-posed" operator can be obtained from a wide range of fields such as heat profusion, acoustic wave propagation, and Laplacian equation. Compared with the standard correlation-based **watermark**, the new **watermark** has smaller payload and approximately the same probability of correct detection. In addition the new **watermark** has much lower probability of false alarm. We describe the "ill-posed" operator in detail and use examples to demonstrate the performance of the **watermark**.

(9 Refs)

Subfile: B C

Descriptors: correlation methods; image coding; mathematical operators;

matrix algebra; probability; **watermarking**

Identifiers: ill-posed matrix; correlation-based digital **watermarking** ; spatial domain; pseudo-random noise pattern; noise pattern; **watermark** detection; correlated image; correct detection probability; false alarm probability; conditional number; pseudo-random patterns; heat profusion; acoustic wave propagation; Laplacian equation

Class Codes: B6135C (Image and video coding); B0290H (Linear algebra (numerical analysis)); B0240Z (Other topics in statistics); C5260B (Computer vision and image processing techniques); C6130S (Data security); C4140 (Linear algebra (numerical analysis)); C1140Z (Other topics in statistics)

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14/5/9 (Item 4 from file: 2)

DIALOG(R) File 2:INSPEC

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5591050 INSPEC Abstract Number: B9707-6140C-109, C9707-1250-041

**Title: Phase watermarking of digital images**

Author(s): Ruanaidh, J.J.K.O.; Dowling, W.J.; Boland, F.M.

Author Affiliation: Dept. of Electron. & Electr. Eng., Dublin Univ., Ireland

Conference Title: Proceedings. International Conference on Image Processing (Cat. No.96CH35919) Part vol.3 p.239-42 vol.3

Publisher: IEEE, New York, NY, USA

Publication Date: 1996 Country of Publication: USA 3 vol. (xlviii+1029+1067+1073) pp.

ISBN: 0 7803 3259 8 Material Identity Number: XX96-03469

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Conference Title: Proceedings of 3rd IEEE International Conference on Image Processing

Conference Sponsor: IEEE Signal Process. Soc

Conference Date: 16-19 Sept. 1996 Conference Location: Lausanne, Switzerland

Language: English Document Type: Conference Paper (PA)

Treatment: Theoretical (T); Experimental (X)

Abstract: A **watermark** is an invisible mark placed on an image that can be detected when the image is compared with the original. This mark is designed to identify both the source of an image as well as its intended recipient. The mark should be tolerant to reasonable quality lossy compression of the image using transform coding or vector quantization. Standard image processing operations such as low pass **filtering**, cropping, translation and rescaling should not remove the mark. Spread **spectrum** communication techniques and matrix transformations can be used together to design **watermarks** that are robust to tampering and are visually imperceptible. This paper discusses techniques for embedding such marks in grey scale digital images. It also proposes a novel phase based method of conveying the **watermark** information. In addition, the use of optimal detectors for **watermark** identification is also proposed. (13 Refs)

Subfile: B C

Descriptors: data compression; discrete Fourier transforms; image coding; security of data; signal detection; spread spectrum communication; transform coding; vector quantisation

Identifiers: phase **watermarking** ; DFT; image source; image recipient; lossy image compression; transform coding; vector quantization; image processing; low pass filtering; cropping; translation; rescaling; spread spectrum communication techniques; matrix transformations; **watermark** design; grey scale digital images; phase based method; **watermark** information; optimal detectors; **watermark** identification; additive Gaussian noise

Class Codes: B6140C (Optical information, image and video signal processing); B6120B (Codes); B0290Z (Other numerical methods); C1250 (Pattern recognition); C5260B (Computer vision and image processing techniques); C6130S (Data security); C4190 (Other numerical methods)

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14/5/10 (Item 5 from file: 2)  
DIALOG(R)File 2:INSPEC  
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5218588 INSPEC Abstract Number: C9605-7820-006

**Title: Image analysis for dating of old manuscripts**

Author(s): Wenger, E.; Karnaukhov, V.N.; Haidinger, A.; Merzlyakov, N.S.  
Author Affiliation: Inst. of Inf. Process., Austrian Acad. of Sci., Vienna, Austria

Conference Title: Image Analysis Applications and Computer Graphics.  
Third International Computer Science Conference. ICSC'95. Proceedings p.  
522-3

Editor(s): Chin, R.T.; Ip, H.H.S.; Naiman, A.C.; Pong, T.-C.

Publisher: Springer-Verlag, Berlin, Germany

Publication Date: 1995 Country of Publication: West Germany xvi+533  
pp.

ISBN: 3 540 60697 1 Material Identity Number: XX95-02123

Conference Title: Proceedings of 3rd International Computer Science  
Conference Image Analysis Applications and Computer Graphics

Conference Sponsor: IEEE Hong Kong Sect. Comput. Chapter; IEEE Comput.  
Soc.; Int. Assoc. Pattern Recognition; Silicon Graphics; Sun Microsyst.  
California; Hong Kong Television Broadcasts; Motorola Semicond

Conference Date: 11-13 Dec. 1995 Conference Location: Hong Kong

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: This paper presents an application of digital image processing  
to historical sciences. A major tool for dating old undated documents are  
**watermarks** found in the paper. Hardcopies of the **watermarks** are  
scanned, **preprocessed**, improved and contrast enhanced by adaptive digital  
filtering methods for printing, storing in an image database, and  
extracting the **watermark** as a set of strokes from the image. For  
extraction, a semiautomatic procedure is suggested. The extraction result  
is a short sequence of cubic spline curves representing the **watermark**  
fully and allowing to select identical or similar **watermarks** from the  
existing database. (2 Refs)

Subfile: C

Descriptors: document image processing; feature extraction; history;  
splines (mathematics); visual databases

Identifiers: image analysis; old manuscript dating; digital image  
processing; historical sciences; **watermarks**; document image scanning;  
contrast enhancement; adaptive digital filtering methods; image database;  
feature extraction; cubic spline curves

Class Codes: C7820 (Humanities computing); C5260B (Computer vision and  
image processing techniques); C6130D (Document processing techniques);  
C4130 (Interpolation and function approximation)

Copyright 1996, IEE

14/5/11 (Item 1 from file: 6)  
DIALOG(R)File 6:NTIS  
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2172695 NTIS Accession Number: ADA378885/XAB

**Two-Dimensional Malvar Wavelets and Their Applications in Jamming  
Resistance Communication and Navigation**

(Final rept. 1 Jun-31 Dec 1997)

Xia, X.

Delaware Univ., Newark. Dept. of Electrical and Computer Engineering.

Corp. Source Codes: 007532015; 433659

Report No.: AFRL-SR-BL-TR-00-0229

1 Jul 1999 187p

Languages: English

Journal Announcement: USGRDR0022

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located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A10/MF A02

Country of Publication: United States

Contract No.: F49620-97-1-0253

This report describes the main research achievements during the time period cited above on the research project in the area of signal processing and telecommunications. The main achievements include the construction of Malvar, wavelets on arbitrary shapes a new system identification method using chirp signals and joint time- **frequency** analysis method, a new **prefiltering** for discrete multiwavelet transforms, and some new signal processing methods for telecommunications, and radar applications of jamming resistance.

Descriptors: \*Radar antijamming; \*Telecommunications; Identification systems; Digital communications; Wavelet transforms

Identifiers: Malvar wavelets; **Water marking** ; Multiwavelets; NTISDODXA

Section Headings: 63B (Detection and Countermeasures--Electromagnetic and Acoustic Countermeasures); 45C (Communication--Common Carrier and Satellite)

14/5/12 (Item 2 from file: 6)

DIALOG(R)File 6:NTIS

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0634662 NTIS Accession Number: AD-A039 907/1/XAB

**Development of an Adaptive Kalman Target Tracking Filter and Predictor for Fire Control Applications**

(Final rept)

Clark, B. L.

Naval Surface Weapons Center Dahlgren Lab Va

Corp. Source Codes: 391598

Report No.: NSWC/DL-TR-3445

Mar 77 139p

Journal Announcement: GRAI7716

Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A07/MF A01

This report describes the development of an adaptive Kalman filter for target tracking and prediction that was subsequently implemented in the **digital MARK** 68 Gunfire Control System (GFCS) as part of the Gunnery Improvement Program. The discrete Kalman filter is introduced along with a brief discussion of its selection for this application. The general problem of target modeling was presented with emphasis on conventional polynomial models and their convergence properties. A stochastic target model, a first order Markov process in acceleration, was introduced, and the advantages over the polynomial were models explored. A dual bandwidth adaptation algorithm with associated maneuver detection logic was developed and favorably compared with more conventional adaptation methods. A Kalman **filter** to handle serially correlated observation **error** (without state vector augmentation) was found, restructured to improve the computational efficiency and exercised to determine parametric sensitivity to correlation effects. **Prefiltering**, or data compression techniques, were studied and found to significantly reduce required computation with negligible degradation in performance. Square root covariance propagation (in single precision) was found to be considerably more efficient (by a factor of 4.5) than double precision covariance for the particular filter model and computer for this application. The three-dimensional filtering problem was approached by first developing the optimal nonlinear filter as a standard and then evaluating on a relative basis several suboptimal linearized versions.

Descriptors: \*Fire control computers; \*Target lead indicators; Kalman filtering; Adaptive filters; Gunnery; Markov processes; Stochastic processes; Algorithms; Parametric analysis; Computerized simulation; White noise; Subroutines; Fortran

Identifiers: NTISDODXA

Section Headings: 79F (Ordnance--Fire Control and Bombing Systems)

14/5/13 (Item 1 from file: 144)  
DIALOG(R)File 144:Pascal  
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12594388 PASCAL No.: 96-0280817

**Traitements numeriques d'images. Detection et metrologie de parcellaires.  
Restauration d'empreintes de filigranes**

**(Image processing. Parcel detection and metrology. Restoration of  
watermarks )**

JOURDAIN Philippe; TRIBILLON G, dir

Universite de Besancon, Besancon, Francee

Univ.: Universite de Besancon. Besancon. FRA Degree: Th. doct.

1995-07; 1995 187 p.

Availability: INIST-T 103233; T95BESA2049

No. of Refs.: 80 ref.

Document Type: T (Thesis) ; M (Monographic)

Country of Publication: France

Language: French Summary Language: French; English

Les travaux presentes dans ce memoire concernent deux applications originales du Traitement Numerique d'Image. La premiere, conduite avec la participation active de specialistes dans l'etude morphologique des paysages agraires, vise a la detection et a la metrologie des parcellaires a partir de photographies aeriennes. L'etape de detection et d'extraction d'un parcellaire est assuree par plusieurs procedures basees sur le calcul du module et de l'orientation du gradient en niveau de gris, estime par un operateur de type Sobel. Une seconde phase consiste ensuite a analyser les differentes periodicites regissant l'agencement des limites du parcellaire detecte. Cette analyse est effectuee a partir du spectre de Fourier d'un signal unidimensionnel, issu du parcellaire extrait. Enfin une derniere etape permet de visualiser, directement sur les images analysees, les elements du parcellaire associes a une periodicite donnee, et de verifier ainsi l'authenticite des resultats obtenus. La deuxieme application s'insere dans le cadre d'un projet developpe a l'Institut des Textes et des Manuscrits Modernes de Paris concernant la realisation d'une base de donnee iconographique sur les papiers filigranes. Elle consiste a mettre au point une procedure de restauration de cliches betagographiques d'empreintes de filigranes, perturbes par differents defauts inherents au procede de fabrication du papier et a la prise de vue des cliches. Dans un premier temps, des traitements bases sur le filtrage dans le domaine de Fourier, permettent d'ameliorer et d'homogeneiser le contraste du filigrane, et de supprimer la trame caracteristique des papiers verges. Des techniques de segmentation basees sur le principe de focus d'attention et sur l'utilisation de modeles pyramidaux, sont ensuite developpees afin d'extraire le plus fidelement possible le trace du filigrane. L'image restauree est obtenue a partir d'une combinaison des resultats des differents traitements

English Descriptors: Image processing; Digital image; Edge detection;

Archaeology; Spatial **frequency filtering** ; Segmentation

French Descriptors: Traitement image; Image numerique; Detection contour;

Archeologie; Filtrage frequence spatiale; Segmentation; Parcellaire;

Filigrane

Classification Codes: 001D04A05C

14/5/14 (Item 1 from file: 95)  
DIALOG(R)File 95:TEME-Technology & Management  
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01739601 20030406614

**Use of ill-posed operator in correlation-based watermarking**

Liang Lei; Xu Xiaohang

Dept. of Electr. & Comput. Engng., Massachusetts Univ., Amherst, MA, USA

Multimedia Systems and Applications V, 29-30 July 2002, Boston, MA, USA

Proceedings of the SPIE - The International Society for Optical Engineering

, v4861, n1, pp183-191, 2002

Document type: Conference paper Language: English

Record type: Abstract

ISSN: 0277-786X

ABSTRACT:

One of the straightforward ways to add a **watermark** to an image in the spatial domain is to add a pseudo-random noise pattern to the original image. The noise pattern can be generated based on a seed. To detect the **watermark** in an image, the image is correlated with the noise pattern and the correlation is compared to a preset threshold. Important considerations of the above mentioned correlation-based **watermarking** techniques are the probability of correct detection and the probability of false alarm. We present a method of using an "ill-posed" operator to **pre - process** the **noise** pattern. The **watermark** is obtained by pre-multiplying a noise pattern by the inverse of an "ill-posed" operator. An "ill-posed" operator has a large conditional number, i.e., the ratio of the largest singular value to the smallest singular value. Because of the large conditional number, the inverse of an "ill-posed" operator has a large change in the output when the input changes slightly. In **watermarking**, the "ill-posedness" can be exploited to improve the performance of correlation-based **watermarking** because of the pseudo-random patterns generated by different seeds have very low correlation with each other and this feature is amplified by the inverse of the "ill-posed" operator. The "ill-posed" operator can be obtained from a wide range of fields such as heat profusion, acoustic wave propagation, and Laplacian equation. Compared with the standard correlation-based **watermark**, the new **watermark** has smaller payload and approximately the same probability of correct detection. In addition the new **watermark** has much lower probability of false alarm. We describe the "ill-posed" operator in detail and use examples to demonstrate the performance of the **watermark**.

DESCRIPTORS: CORRELATION METHOD; IMAGE CODING; MATHEMATICAL OPERATOR; MATRIX ALGEBRA; LIKELIHOOD; ACOUSTIC WAVE PROPAGATION

IDENTIFIERS: WASSERZEICHENKENNZEICHNUNG; RAUMBEREICH; WASSERZEICHENERKENNUNG; FEHLALARM; ALARMWAHRSCHEINLICHKEIT; PSEUDOZUFALLSMUSTER; Korrelationsverfahren; Bildcodierung

14/5/15 (Item 2 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management

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01045610 E96100992261

Watermarking **digital images for copyright protection**

(Copyright-Schutz digitaler Bilder durch Wasserzeichen)

O'Ruanaidh, JJK; Dowling, WJ; Boland, FM

Univ. de Geneve, CH; Trinity College Dublin, IRL

IEE Proceedings Vision, Image and Signal Processing, v143, n4, pp250-256, 1996

Document type: journal article Language: English

Record type: Abstract

ISSN: 1350-245X

ABSTRACT:

Die Kennzeichnung digitaler Bilder durch Wasserzeichen wird vorgestellt. Das Anbringen von Wasserzeichen dient der Identifizierung von Bildern, ihrer Quellen und Empfänger sowie zum Schutze des Copyrights. Ein grosses Problem war bisher das Einbetten unsichtbarer Wasserzeichen in Graustufen- und Farbbildern. Ein Ueberblick ueber bestehende Wasserzeichen-Techniken wird gegeben. Alternativen zur Loesung der angesprochenen Problematik werden vorgestellt.

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14/5/13 (Item 1 from file: 144)  
DIALOG(R)File 144:Pascal  
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12594388 PASCAL No.: 96-0280817

Traitements numeriques d'images. Detection et metrologie de parcellaires.  
Restauration d'empreintes de filigranes

**(Image processing. Parcel detection and metrology. Restoration of watermarks )**

JOURDAIN Philippe; TRIBILLON G, dir

Universite de Besancon, Besancon, Francee

Univ.: Universite de Besancon. Besancon. FRA Degree: Th. doct.

1995-07; 1995 187 p.

Availability: INIST-T 103233; T95BESA2049

No. of Refs.: 80 ref.

Document Type: T (Thesis) ; M (Monographic)

Country of Publication: France

Language: French Summary Language: French; English

Work presentes in this memory relates to two original applications of the Digital processing of Image. The premiere, led with the active participation specialists in the morphological study of the agrarian landscapes, aims has detection and has the metrology of compartmental from air photographs. The stage of detection and extraction of compartmental is assuree by several procedures basees on the calculation of the module and of the orientation of the gradient in level of gray, estimates by an operator of the Sobel type. One second phase consists then has to analyze different the periodicites regissant the fitting of the limits from compartmental the detecte. This analysis is effectuee from the spectrum of Fourier of a unidimensional signal, resulting from compartmental extracted. Finally a derniere stage makes it possible to visualize, directly on the images analysees, the elements of compartmental associate has a periodicite donnee, and of verifier thus the authenticite of the results obtained. The second application insere within the framework of a developpe project has the Institute of the Texts and the Modern Manuscripts of Paris concerning the construction of an iconographic base of donnee on papers filigrees. It consists has to develop a procedure restoration of stereotypes betagraphic prints of filigrees, disturbs by various defects inherents with the procede of manufacture of paper and has the catch of sight of stereotype. Initially, of the bases treatments on filtering in the field of Fourier, allow to improve and of homogeneiser the contrast of the filigree, and to remove the characteristic screen of papers rods. Techniques of segmentation basees on the principle the x-ray one of attention and on the pyramidal use of modeles, are then developpees in order to extract most accurately possible traces it filigree. The image restauree is obtained from a combination of the results of the various treatments.

English Descriptors: Image processing; Digital image; Edge detection;  
Archaeology; Spatial frequency filtering ; Segmentation

14/5/15 (Item 2 from file: 95)  
DIALOG(R)File 95:TEME-Technology & Management  
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01045610 E96100992261

**Watermarking digital images for copyright protection**

(Copyright-Schutz digitaler Bilder durch Wasserzeichen)

O'Ruanaidh, JJK; Dowling, WJ; Boland, FM

Univ. de Geneve, CH; Trinity College Dublin, IRL

IEE Proceedings Vision, Image and Signal Processing, v143, n4, pp250-256,  
1996

Document type: journal article Language: English

Record type: Abstract  
ISSN: 1350-245X

ABSTRACT:

The marking of digital pictures by water-marks is presented. The attachment of water-marks serves the identification of pictures, their sources and receivers as well as for the protection of the copyright. A large problem was so far embedding invisible water-marks in gray tone and farbbildern. An overview of existing water-mark techniques is given. Alternative ones for the solution of the addressed problem are introduced.

DESCRIPTORS: DIGITAL DATA PROCESSING; CIPHERING--ENCRYPTION; SIGNAL PROCESSING; ALGORITHM; LOW PASS FILTERS ; REDUNDANCY; MATHEMATICAL TRANSFORMATIONS; GAUSS DISTRIBUTION; VECTORS; VARIANCE; GAUSS NOISE



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| Set | Items | Description  |
|-----|-------|--|
| S1  | 27478 | WATERMARK??? OR WATER()MARK???? OR (ELECTRONIC OR DIGITAL)-<br>(1W) (MARK? ? OR MARKING? ?) OR STEGANOGRAPH? |
| S2  | 15412 | PREFILTER? OR PREPROCESS??? OR PRE() (FILTER??? OR PROCESS?-<br>??)  |
| S3  | 571   | S2(10N) (FREQUENC??? OR SPECTRUM? ? OR ERROR? ? OR NOISE)  |
| S4  | 24225 | (FILTER??? OR WHITEN???) (10N) (FREQUENC??? OR SPECTRUM? ? OR<br>ERROR? ? OR NOISE)                          |
| S5  | 29480 | FREQUENC??? (5N) (SPECTRUM OR NOISE OR ERROR? ?)   |
| S6  | 92840 | (DIGITAL OR DIGITIZED OR DIGITISED) (1W) (IMAGE? ? OR PHOTO?<br>? OR PHOTOGRAPH? ? OR PICTURE? ?)            |
| S7  | 3     | S1(50N)S3  |
| S8  | 12    | S1(50N)S4  |
| S9  | 38    | S1(50N)S2  |
| S10 | 7     | S6(50N)S3  |
| S11 | 60    | S6(50N)S4  |
| S12 | 60    | S6(50N)S2  |
| S13 | 12    | S2(10N) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? -<br>?) (10N)S5                                   |
| S14 | 174   | S7:S13   |
| S15 | 109   | RD (unique items)  |
| S16 | 37    | S15 NOT PY=1997:2004   |

16/3,K/1 (Item 1 from file: 275)  
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01612163 SUPPLIER NUMBER: 14096937 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**New FITS technology poised to change digital imaging. (FITS Imaging Inc.  
Live Picture) (News Analysis) (Product Announcement)**  
Fraser, Bruce  
MacWEEK, v7, n31, p36(2)  
August 2, 1993  
DOCUMENT TYPE: Product Announcement ISSN: 0892-8118 LANGUAGE:  
ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 1556 LINE COUNT: 00124

...ABSTRACT: traditional barriers to processing of very large images on desktop platforms and could fundamentally alter **digital image** handling. The product, implemented entirely in software, will be released in the US by HSC Software in Sep 1993 for \$3,495. It uses new technology that combines **preprocessing**, image editing and a proprietary raster image processing (RIP) technique. Image data is converted into...

16/3,K/2 (Item 2 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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01611278 SUPPLIER NUMBER: 13922821 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Hardware-software combo could simplify MPEG real-time video compression. (MasPar Computer Corp. hardware and Prism Interactive Corp. encoder software)**  
Nass, Richard  
Electronic Design, v41, n9, p36(1)  
May 3, 1993  
ISSN: 0013-4872 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 802 LINE COUNT: 00065

... operate on 1.5-Mbit/s T1 lines. By altering the spatial filter coefficients for **preprocessing** operations, the spatial **noise** or selective high- **frequency** content of video **images** can be reduced. The encoder also supports various nonlinear filters for temporal **preprocessing** to reduce noise from misaligned field **images** and increase frame-to-frame correlation. The input subsampling rate is selectable, so variable-size...

16/3,K/3 (Item 3 from file: 275)  
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01584752 SUPPLIER NUMBER: 13429168 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Image processing, part 9: histogram-based image segmentation. (Tutorial)**  
Phillips, Dwayne  
C Users Journal, v11, n2, p63(22)  
Feb, 1993  
DOCUMENT TYPE: Tutorial ISSN: 0898-9788 LANGUAGE: ENGLISH  
RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 3309 LINE COUNT: 00252

... You will need other techniques to attack more complex images.

References  
Castleman, Kenneth R. 1979. **Digital Image** Processing.  
Prentice-Hall.  
Phillips, Dwayne. August 1991. "Image Processing, Part 4: Histograms and Histogram Equalization," The C Users Journal.  
Phillips, Dwayne. October 1992. "Image Processing, Part 7: Spatial **Frequency Filtering**," The C Users Journal.  
The author works as a computer and electronics engineer with the...

16/3,K/4 (Item 4 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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01572535 SUPPLIER NUMBER: 14624749

**On 3-D real-time perspective generation from a multiresolution photo-mosaic data base. (Technical)**

Hooks, John T., Jr.; Martinsen, Garth J.; Devarajan, Venkat  
CVGIP: Graphical Models and Image Processing, v55, n5, p333(13)  
Sept, 1993

DOCUMENT TYPE: Technical ISSN: 1049-9652 LANGUAGE: ENGLISH  
RECORD TYPE: ABSTRACT

...ABSTRACT: processing speed requirements and the input database size. It is assumed that a multiple resolution, **digital photo** -mosaic of a gaming area is available: the mosaic is comprised of several photographs and...

...created via scanning, digitizing, radiometric and geometric balancing, registration with elevation data, tiling, and other **preprocessing** steps. Multiple-resolution versions of the mosaic can be generated using techniques similar to those...

16/3,K/5 (Item 5 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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01557558 SUPPLIER NUMBER: 14624306

**Contrast enhancement using the Laplacian-of-a-Gaussian filter. (Technical)**

Neycenssac, Franck  
CVGIP: Graphical Models and Image Processing, v55, n6, p447(17)  
Nov, 1993

DOCUMENT TYPE: Technical ISSN: 1049-9652 LANGUAGE: ENGLISH  
RECORD TYPE: ABSTRACT

ABSTRACT: A time-saving method for enhancing contrast in degraded **digital images** is developed. It has advantages over Marr-Hildreth edge detection but is not preferable to equalization contrast enhancement unless control over which **frequencies** will be enhanced is desired. The proposed **filtering** technique mimics human peripheral vision by performing the Laplacian-of-a-Gaussian (LoG) on the...

...3 x 3 Laplacian as suggested by Rosenfeld. The LoG method is affected less by **noise**, and only one **filter** is needed per **frequency** range enhanced. Sampling and image border problems are addressed with the Fourier transform. Electron micrographs and **digitized photographs** are LoG enhanced and compared with images enhanced via calibration, equalization and the Prewitt-Rosenfeld...

16/3,K/6 (Item 6 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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01502752 SUPPLIER NUMBER: 11944065 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Video teleconferencing: the state of the art. (includes related article on video teleconferencing standards)**

Thuston, Francine  
Telecommunications, v26, n1, p63(3)  
Jan, 1992

ISSN: 0278-4831 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 2138 LINE COUNT: 00181

... decoded back into analog voice and video. There are four steps to video codec technology:

- \* **preprocessing** -- removes high- **frequency noise**,
- \* encoding -- each block of the **picture**, ranging from 8 x 8 to 16 x 16 pixels in size is digitized,

\* decoding...

16/3,K/7 (Item 7 from file: 275)  
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01419430 SUPPLIER NUMBER: 09394494 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Recognizing patterns. (AI Apprentice - column) (tutorial)**  
Minasi, Mark  
AI Expert, v6, n2, p15(3)  
Feb, 1991  
DOCUMENT TYPE: tutorial ISSN: 0888-3785 LANGUAGE: ENGLISH  
RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 1321 LINE COUNT: 00100

... PC to a scanner, and you can convert old paper documents into machine-readable form.

\* **Digital image** processing, which lets us see those fantastic pictures that Voyager brought back.

\* Digital sound processing...

...Readers of Tom Clancy's Hunt For Red October remember that computers are used to **filter** out **noise** when subhunting, but humans are needed to separate the wheat from the chaff--for now...

16/3,K/8 (Item 8 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

01373736 SUPPLIER NUMBER: 09468045 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**PC scanners: not just for high-end users anymore. (Lab Notes; includes related glossary) (column)**  
Alford, Roger C.  
PC Magazine, v9, n17, p403(9)  
Oct 16, 1990  
DOCUMENT TYPE: column ISSN: 0888-8507 LANGUAGE: ENGLISH  
RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 7681 LINE COUNT: 00596

... file to text and send ASCII characters to the PC.

Most scanners, however, do not **preprocess** the image data. The unprocessed **digital image** data is simply transferred to the computer, where it is typically stored in a disk...

16/3,K/9 (Item 9 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

01369845 SUPPLIER NUMBER: 08755438 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Videoconferencing standards.**  
Luhmann, Rick  
Teleconnect, v8, n8, p62(3)  
August, 1990  
ISSN: 0740-9354 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 1814 LINE COUNT: 00141

... these guys is a four-step process, with each step making a big impact on **picture** quality along the way.

First, there's **pre - processing** which gets rid of high- **frequency noise** from the digitized **picture**. The better a signal is **pre - processed**, the higher its potential quality. (Again, no matter how much **pre - processing** occurs, though, if a transmission conforms to the H.261 standard, it can be received...

16/3,K/10 (Item 10 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

01338560 SUPPLIER NUMBER: 08834842  
**Digitized photos meet deadline. (On Site)**  
Anthes, Gary H.  
Computerworld, v24, n37, p63(1)  
Sept 10, 1990  
ISSN: 0010-4841 LANGUAGE: ENGLISH RECORD TYPE: ABSTRACT

...ABSTRACT: minutes before press time by bypassing traditional photo processing and sending images directly to a **digital photo** editing center. Sony Corp electronic still cameras are used and then, aided by a digital **preprocessor**, are sent via telephone to an electronic darkroom at headquarters. The actual selection of photographs...

16/3,K/11 (Item 11 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

01323474 SUPPLIER NUMBER: 08369208  
**Engineering drawing processing and vectorization system. (technical)**  
Nagasamy, Vijay; Langrana, Noshir A.  
Computer Vision, Graphics & Image Processing, v49, n3, p379(19)  
March, 1990  
DOCUMENT TYPE: technical ISSN: 0734-189X LANGUAGE: ENGLISH  
RECORD TYPE: ABSTRACT

ABSTRACT: Methods are presented for **preprocessing** and vectorizing scan **digitized images** of engineering drawings for transferring the resulting data to commercially available CAD/CAM systems. **Preprocessing** steps include void filling, **noise** removal, image segmentation, contour extraction and line thinning. Algorithms are presented for raster-to-vector ...

16/3,K/12 (Item 12 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

01249787 SUPPLIER NUMBER: 06525381 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**From noise comes beauty. (generating textures in computer graphics)**  
**(technical)**  
Pickover, Clifford  
Computer Graphics World, v11, n3, p115(2)  
March, 1988  
DOCUMENT TYPE: technical ISSN: 0271-4159 LANGUAGE: ENGLISH  
RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 847 LINE COUNT: 00064

... the image at that point. This averaging procedure acts as a kind of low-pass **filter**, and I call the image it produces a "**noise** gram."  
The next step is to enhance some of the contours of the noise gram and bring out certain features. This is done by transforming the **digitized image** via a look-up table (LUT) computed from a sinusoidal function of the form f...

16/3,K/13 (Item 13 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2004 The Gale Group. All rts. reserv.

01236565 SUPPLIER NUMBER: 06333859 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Distributed control and localized processing power will shape avionics.**  
**(1988 Technology Forecast)**  
Denton, Richard

Electronic Design, v36, n1, p148(2)

Jan 7, 1988

ISSN: 0013-4872

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT

WORD COUNT: 1303

LINE COUNT: 00112

... same functionality to chip-level products.

Chip-level implementation of imaging functions such as capture, **noise - filtering**, histogram, and convolution, will permit **digital image** processing inside the sensors. By placing the number-crunching power closer to the data, information...

**16/3,K/14 (Item 14 from file: 275)**

DIALOG(R)File 275:Gale Group Computer DB(TM)

(c) 2004 The Gale Group. All rts. reserv.

01233827 SUPPLIER NUMBER: 06423532

**Minimum complexity FIR filters and sparse systolic arrays. (finite impulse response).**

Ferrari, Leonard A.; Sankar, P.V.

IEEE Transactions on Computers, v37, n6, p760(5)

June, 1988

ISSN: 0018-9340

LANGUAGE: ENGLISH

RECORD TYPE: ABSTRACT

...ABSTRACT: can be used to create algorithms to implement efficient multidimensional finite impulse response (FIR) recursive **digital image** filters with almost no loss of accuracy or performance. A simplified systolic array processor architecture is sufficient for the implementation of the algorithm for a 2D FIR filter. A **pre - filter** with a small number of adder and delay circuits is required for input signals. Details...

**16/3,K/15 (Item 15 from file: 275)**

DIALOG(R)File 275:Gale Group Computer DB(TM)

(c) 2004 The Gale Group. All rts. reserv.

01215844 SUPPLIER NUMBER: 07003267

**Level crossing curvature and the Laplacian. (technical)**

Lei, Guo

Image and Vision Computing, v6, n3, p185(4)

Aug, 1988

DOCUMENT TYPE: technical

ISSN: 0262-8856

LANGUAGE: ENGLISH

RECORD TYPE: ABSTRACT

...ABSTRACT: are location errors proportional to the level crossing curvature. Level crossing curvature is sensitive to **noise**, so **filtering** of **digital** of **images** becomes important.

**16/3,K/16 (Item 16 from file: 275)**

DIALOG(R)File 275:Gale Group Computer DB(TM)

(c) 2004 The Gale Group. All rts. reserv.

01181997 SUPPLIER NUMBER: 06171356

**The effect of median filtering on edge estimation and detection.**

**(technical)**

Bovik, Alan Conrad; Huang, Thomas S.; Munson, David C., Jr.

IEEE Transactions on Pattern Analysis and Machine Intelligence, v9, n2, p181(14)

March, 1987

DOCUMENT TYPE: technical

ISSN: 0162-8828

LANGUAGE: ENGLISH

RECORD TYPE: ABSTRACT

ABSTRACT: The effect of median **prefiltering** on the subsequent edge estimation and detection in **digital images** is considered. A quantitative statistical comparison is made, where possible, for a number of filters...

...dimensional analyses are required, in some instances, to illustrate certain points. Supporting the analysis are **noise** images **prefiltered** by median **filters**. These **filters** are defined with a number of windowing geometries. By using computed moments, error probabilities, and...

16/3,K/17 (Item 17 from file: 275)

DIALOG(R)File 275:Gale Group Computer DB(TM)

(c) 2004 The Gale Group. All rts. reserv.

01178072 SUPPLIER NUMBER: 04549243 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Firm customizes image-processing software for a wider range of users.**

(product announcement)

Bellamah, Pat

PC Week, v3, n49, p12(1)

Dec 9, 1986

DOCUMENT TYPE: product announcement ISSN: 0740-1604

LANGUAGE:

ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 667 LINE COUNT: 00053

... Pro include a variety of filters. Filtering involves enhancing or suppressing different parts of a **digitized** video **image**.

In a **digitized image**, changes in intensity between pixels reflect changes in frequency. From a black pixel to a...

...example, is a high-frequency change. The difference between shades of gray is a low- **frequency** change.

DT/Image Pro can perform "low-pass" **filters**, which remove all the high- **frequency** noises from a picture (extremes of black and white), leaving everything smooth.

It also does...

16/3,K/18 (Item 18 from file: 275)

DIALOG(R)File 275:Gale Group Computer DB(TM)

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01141734 SUPPLIER NUMBER: 00646508

**Adaptive Filters for Digital Image Noise Smoothing: An Evaluation.**

Mastin, G.A.

Computer Vision, Graphics & Image Processing, v31, n1, p103-121

July, 1985

ISSN: 0734-189X

LANGUAGE: ENGLISH

RECORD TYPE: ABSTRACT

**Adaptive Filters for Digital Image Noise Smoothing: An Evaluation.**

...ABSTRACT: nonlinear adaptive noise smoothing has become one widely appreciated way of eliminating visual interference from **digital images**. Six such **noise filtering** algorithms were tested and evaluated. All six procedures were shown to be variously effective on...

...some printed text, and a military tank in a desert. Twenty human participants ranked the **filtered** imagery. For additive **noise** smoothing and multiplicative **noise** smoothing the Lee additive **filter** and the Modified Wallis **filter** respectively performed with the greatest degree of success. The key function here seems to be...

16/3,K/19 (Item 1 from file: 621)

DIALOG(R)File 621:Gale Group New Prod. Annou. (R)

(c) 2004 The Gale Group. All rts. reserv.

01221565 Supplier Number: 43897081 (USE FORMAT 7 FOR FULLTEXT)

**ACCOM SHOWS DIVERSE PRODUCT RANGE**

News Release, p1

June 11, 1993

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 339

... products already mentioned, Accom exhibited several of its high quality digital signal processing products including **noise** and grain reduction with median **filtering**, encoding and decoding, analog to digital and digital to analog converters, and its **digital image** store and ICM 10-bit switcher/keyer.

Accom designs, manufactures, and sells video equipment for...

16/3,K/20 (Item 1 from file: 16)  
DIALOG(R)File 16:Gale Group PROMT(R)  
(c) 2004 The Gale Group. All rts. reserv.

01747059 Supplier Number: 42187484 (USE FORMAT 7 FOR FULLTEXT)  
**Q&A: PROSTATE ULTRASONOGRAPHY: Evaluating the Attributes of Ultrasonography**  
Urology Times, pN/A  
July, 1991  
Language: English Record Type: Fulltext  
Document Type: Magazine/Journal; Trade  
Word Count: 3985

... the frequency during the examination, thus providing a choice between greater sound penetration and enhanced **image** resolution. Some companies now offer new transducers that permit emphasis of the individual **frequencies** over a broad **frequency spectrum**.

In addition, much experimental work is being done on both **preprocessing** and postprocessing the **image** electronically. It is wonderful that there is so much competition among the manufacturers because each...

16/3,K/21 (Item 1 from file: 160)  
DIALOG(R)File 160:Gale Group PROMT(R)  
(c) 1999 The Gale Group. All rts. reserv.

00748455  
**Muirhead's new 25 lb facsimile transmitter has an integral carrying case for convenient transportation.**  
Financial Times (Frankfurt Edition) March 12, 1982 p. 9

... 570 unit, with drum speeds of 60, 120 and 240 rpm, operates in amplitude or **frequency** modulation modes and is equipped with selective **filters** to allow the transmission of color separations. It also has 2 adjustable selectors that allow...

... it. A video baseband output is provided for connection to a computer system and for **digital picture** transmission directly or from a computer store.  
...

16/3,K/22 (Item 1 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

08928019 SUPPLIER NUMBER: 18540528 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**24-bit. (EDN DSP Directory)**  
EDN, v41, n5, p87(3)  
March 1, 1996  
ISSN: 0012-7515 LANGUAGE: English RECORD TYPE: Fulltext; Abstract  
WORD COUNT: 1990 LINE COUNT: 00161

...ABSTRACT: BDSP9124 and 9320 chip sets. The products feature various digital signal processing functions such as **digital filtering**, **image** recognition and **spectrum** analysis. Motorola Inc. has developed two products based on the 24-bit architecture. The DSP5600x...



... s chip set, with BDSP9124 DSP and BDSP9320 memory manager, performs DSP functions, such as **digital filtering**, **image** recognition, image recognition, image compression, **spectrum** analysis, correlation, convolution, and adaptive **filtering** in the **frequency** or time domains.

The BDSP9124's quad-port architecture includes two bidirectional data ports, a...

16/3,K/23 (Item 2 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

08127401 SUPPLIER NUMBER: 17336869 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**GAP tracks the old frontier from the final frontier. (the National Biological Service's Gap Analysis Program)**

Silver, Judith

Government Computer News, v14, n15, p93(1)

July 31, 1995

ISSN: 0738-4300 LANGUAGE: English RECORD TYPE: Fulltext; Abstract

WORD COUNT: 743 LINE COUNT: 00064

... to USGS's Earth Resources Observation Systems Data Center in Sioux Falls, S.D., for **preprocessing**.

The EROS Data Center formats and standardizes the data into **digital images**, removing distortions so the images are useful. It then distributes relevant images to all states...

16/3,K/24 (Item 3 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

07590402 SUPPLIER NUMBER: 16488158 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Desktop image analysis now automates tedious bio lab tasks.**

Davis, Andrew W.

Advanced Imaging, v9, n10, p45(3)

Oct, 1994

ISSN: 1042-0711 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT

WORD COUNT: 2096 LINE COUNT: 00172

... pass filtering is another pre-programmed operation in Concept Vi, very useful for taking out **noise** in a **digitized image**. Low pass **filters** can be implemented in either the **frequency** or spatial domain, depending on the application. The cell tracker software uses a simple spatial...

16/3,K/25 (Item 4 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

07169226 SUPPLIER NUMBER: 14783306 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**AOX DEMONSTRATES UNIVERSAL DIGITAL VIDEO FORMAT AT DIGITAL HOLLYWOOD**

PR Newswire, p0207NE011

Feb 7, 1994

LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT

WORD COUNT: 590 LINE COUNT: 00052

... technology can be implemented on Intel 80X86, PowerPC or Digital Signal Processor (DSP)-based platforms.

**Digital** video **image** quality is of great concern to video application developers, and Aox's digital video format addresses image integrity in two ways. QuickStream employs a digital **noise** control **filter** which identifies **noise** in the source and then eliminates it from propagating through digital video stream. Aox also...

16/3,K/26 (Item 5 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

05899716 SUPPLIER NUMBER: 12270006 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**SAR seeker among JDAM candidates. (synthetic aperture radar, Joint Direct  
Attack Munition program)**  
Tapscott, Mark  
Defense Electronics, v24, n5, p14(2)  
May, 1992  
ISSN: 0278-3479 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 673 LINE COUNT: 00053

... operator designates a target on a SAR imagery display. The  
attacking aircraft's on-board **pre - processor** converts the SAR target  
image to a **digital** reference **image** that is then given to the seeker.  
The Loral SAR uses Ku band while the...

**16/3,K/27 (Item 6 from file: 148)**  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

05835233 SUPPLIER NUMBER: 12119253 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**A soaring machine vision market reveals opportunities for the nimble.**  
Manji, James F.  
Penton's Controls & Systems, v39, n3, p6(1)  
March, 1992  
ISSN: 1061-0235 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT  
WORD COUNT: 2744 LINE COUNT: 00222

... D sensors and some of the new energy source sensors require  
specialized transform processing and **preprocessing** of the raw data to  
provide a **digital** raster **image**. Transform-processing and **preprocessing**  
sensors are among the most data-intensive but highly repetitive in the  
machine vision industry...

**16/3,K/28 (Item 7 from file: 148)**  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

04609430 SUPPLIER NUMBER: 09170537 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**An overview of electronic image information.**  
Lunin, Lois F.  
Optical Information Systems, v10, n3, p114(17)  
May-June, 1990  
ISSN: 0886-5809 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT  
WORD COUNT: 14131 LINE COUNT: 01208

... to produce newly created information (Gold, 1989).  
Both pattern recognition and image processing deal with **digitized  
images** and have a close relationship. Image processing techniques normally  
are employed in pattern recognition as **preprocessing**. In turn, pattern  
recognition can be helpful in solving image processing problems.  
Image processing applies...

**16/3,K/29 (Item 8 from file: 148)**  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

04607446 SUPPLIER NUMBER: 08599616 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Application of x-ray steppers using optical alignment. (x-ray lithography;  
semiconductor production)**  
Huber, H.; Scheunemann, U.; Cullmann, E.; Rohrmoser, W.  
Solid State Technology, v33, n6, p59(4)  
June, 1990  
ISSN: 0038-111X LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT

WORD COUNT: 1591 LINE COUNT: 00125

... wafer chuck; the [theta] (rotation) motor acts on the mask holder. The autoalignment system uses **digital** halftone **image** processing with incoherent wideband illumination. Image **preprocessing** with video cameras involves performing a fine-by-fine realtime integration of the video signal  
...

16/3,K/30 (Item 9 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

04601158 SUPPLIER NUMBER: 09095253 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Refocusing on vision. (machine-vision in factory automation; includes related article on reject reductions)**  
Dunlap, John  
Automation, v37, n6, p59(4)  
June, 1990  
ISSN: 0896-6052 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT  
WORD COUNT: 2147 LINE COUNT: 00189

... to the EXPERT system. Computer processors within the system convert the video signal to a **digital image** of the workpiece suitable for gray-scale evaluation.

The computer reduces the **digitized image** to a two dimensional black and white or binary image. By using this method for image **preprocessing**, the EXPERT system is able to accurately separate objects from one another and differentiate features...

16/3,K/31 (Item 10 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

04146392 SUPPLIER NUMBER: 07779657 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Bringing image processing into focus. (includes related article on industrial imaging)**  
Blattenbauer, John A.; Kim, Yongmin  
Mechanical Engineering-CIME, v111, n7, p54(3)  
July, 1989  
ISSN: 0025-6501 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT  
WORD COUNT: 2257 LINE COUNT: 00181

... are some of the many applications of digital filtering techniques. In one-dimensional signal processing, **filtering** is done in the time and **frequency** domains. In 2-D **filtering**, the corresponding domains are spatial and spatial **frequency**. Three useful methods of image **filtering** are two-dimensional convolution, 2-D fast Fourier transform, and median filtering.

For **digital images**, 2-D convolution is used to perform linear filtering, which can be defined as: [Mathematical...

...spatial response, may warrant the use of larger windows to more accurately duplicate the desired **filter** characteristics.

When users prefer to work in the spatial **frequency** domain, they can use the 2-D discrete Fourier transform (DFT) to translate 2-D **digital images** into that domain. Here, the 2-D DFT can be expressed: [Mathematical Expression Omitted] where...

16/3,K/32 (Item 11 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

02172664 SUPPLIER NUMBER: 03457445 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**X-ray and beam equipment. (1984 I-R 100 Competition Winners)**  
Research & Development, v26, p133(1)

Oct, 1984

LANGUAGE: ENGLISH      RECORD TYPE: FULLTEXT  
WORD COUNT: 1396      LINE COUNT: 00116

... that is directly coupled to 115 photomultiplier tubes with on-board digital signal processing electronics. **Digital images** are acquired by a 400-element matrix at rates up to 100 frames/sec. The...

...over a fiber-optic link to a data processing unit where the data are bandpass **filtered** for the patient's cardiac **frequencies** using Fourier transforms. Additional processing determines the amount of blood pumped during a beat.

The...

**16/3,K/33      (Item 1 from file: 15)**

DIALOG(R)File 15:ABI/Inform(R)

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00319349 86-19763

**Specific Applications of Image Processing to Surface Flaw Detection**

Sid-Ahmed, M. A.; Soltis, James J.; Rajendran, Narayanaswamy

Computers in Industry v7n2 PP: 131-143 Apr 1986

ISSN: 0166-3615 JRNL CODE: CII

ABSTRACT: An approach to finding surface flaws automatically through **digital image** processing methods is investigated. In addition, a new **preprocessing** transducer applicable to this area is presented. The **digitized image** of the surface of a part to be inspected is obtained by way of a...

**16/3,K/34      (Item 2 from file: 15)**

DIALOG(R)File 15:ABI/Inform(R)

(c) 2004 ProQuest Info&Learning. All rts. reserv.

00216602 83-28163

**A C-MOVE Architecture-Based Multiprocessor System for Encoding Walsh-Hadamard Transformed Images**

Dimitriadis, Basile; Alexandridis, Nikitas; Bourbakis, Nicolas

Microprocessing & Microprogramming v11n3,4 PP: 227-232 Mar/Apr 1983

ISSN: 0165-6074 JRNL CODE: EUJ

...ABSTRACT: MOVE microprocessor for efficient and fast parallel structural decomposition, W-H transform, and encoding of **digital images** is discussed. A reconfigurable and hierarchical tree of interconnected processors is used to implement the W-H transform of an image that is already **preprocessed** and decomposed into a succession of consecutive "'quadrant"' sub-pictures. The regular decomposition procedure is...

**16/3,K/35      (Item 1 from file: 647)**

DIALOG(R)File 647:CMP Computer Fulltext

(c) 2004 CMP Media, LLC. All rts. reserv.

00531967 CMP ACCESSION NUMBER: EBN19930823S2254

**DSP Moves To Mainstream - Sharp Introduces Device For High- Performance, Real-Time Applications**

Dave Webb

ELECTRONIC BUYERS' NEWS, 1993, n 868, 12

PUBLICATION DATE: 930823

JOURNAL CODE: EBN      LANGUAGE: English

RECORD TYPE: Fulltext

SECTION HEADING: Semiconductors

WORD COUNT: 309

... LH9124L DSP, combined with Sharp's LH9320LU-25 address generator chip, is designed to perform **digital filtering**, **image** recognition,

data compression, **spectrum** analysis, image correlation and convolution, and adaptive **filtering**. The chip set makes it "much easier and less expensive to get real-time systems...

16/3,K/36 (Item 2 from file: 647)  
DIALOG(R)File 647:CMP Computer Fulltext  
(c) 2004 CMP Media, LLC. All rts. reserv.

00509471 CMP ACCESSION NUMBER: EET19920907S2339

**Sharp has fixed-point 24-bit DSP chip set**  
ELECTRONIC ENGINEERING TIMES, 1992, n 709, P1  
PUBLICATION DATE: 920907  
JOURNAL CODE: EET LANGUAGE: English  
RECORD TYPE: Fulltext  
SECTION HEADING: Product File  
WORD COUNT: 142

... The LH9320 features over 150 embedded sequences that simplify software development. The chip set performs **digital filtering**, **image** recognition, image compression, **spectrum** analysis, correlation, convolution and adaptive **filtering** in real-time. Software- and hardware-development kits are offered for the the chip set...

16/3,K/37 (Item 1 from file: 810)  
DIALOG(R)File 810:Business Wire  
(c) 1999 Business Wire . All rts. reserv.

0354178 BW056

**SHARP ELECTRONICS 2: Sharp Electronics Corp. announces new high-performance digital signal processing chip**

September 1, 1993

Byline: Business Editors & Computer/Electronics Writers

...applications.

It can process 8-bit to 24-bit data in real time and perform **digital filtering**, **image** recognition, compression, **spectrum** analysis, correlation, convolution and adaptive **filtering** in the time and **frequency** domains.

Supported by the new LH9320LU-25 Address Generator, comprehensive hardware and software development tools...

File 347:JAPIO Nov 1976-2004/Mar(Updated 040708)

(c) 2004 JPO & JAPIO

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200448

(c) 2004 Thomson Derwent

| Set | Items | Description  |
|-----|-------|--|
| S1  | 4901  | WATERMARK??? OR WATER()MARK???? OR (ELECTRONIC OR DIGITAL)-(1W) (MARK? ? OR MARKING? ?) OR STEGANOGRAPH? |
| S2  | 15839 | PREFILTER? OR PREPROCESS??? OR PRE() (FILTER??? OR PROCESS?--??)   |
| S3  | 833   | S2(10N) (FREQUENC??? OR SPECTRUM? ? OR ERROR? ? OR NOISE)  |
| S4  | 77766 | (FILTER??? OR WHITEN???) (10N) (FREQUENC??? OR SPECTRUM? ? OR ERROR? ? OR NOISE)                         |
| S5  | 35457 | FREQUENC??? (5N) (SPECTRUM OR NOISE OR ERROR? ?)   |
| S6  | 26737 | (DIGITAL OR DIGITIZED OR DIGITISED) (1W) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ?)           |
| S7  | 3     | S1 AND S3  |
| S8  | 13    | S1 AND S4  |
| S9  | 23    | S6 AND S3  |
| S10 | 334   | S6 AND S4  |
| S11 | 6     | S2(10N) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? -?) (10N) S5                                  |
| S12 | 43    | S7:S9 OR S11   |
| S13 | 30    | S1 AND S2  |
| S14 | 69    | S12:S13  |
| S15 | 19    | S14 AND AC=US/PR   |
| S16 | 3     | S15 AND AY=(1965:1996)/PR  |
| S17 | 16    | S14 AND PY=1965:1996   |
| S18 | 18    | S16:S17  |

18/5/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2004 JPO & JAPIO. All rts. reserv.

04961463 \*\*Image available\*\*  
IMAGE PROCESSING METHOD

PUB. NO.: 07-254063 [JP 7254063 A]  
PUBLISHED: October 03, 1995 ( 19951003)  
INVENTOR(s): HASHIMO TETSUJI  
SASAGAWA KOICHI  
KURODA SHINICHI  
APPLICANT(s): MITSUBISHI ELECTRIC CORP [000601] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 06-042590 [JP 9442590]  
FILED: March 14, 1994 (19940314)  
INTL CLASS: [6] G06T-007/00; G06T-007/60  
JAPIO CLASS: 45.9 (INFORMATION PROCESSING -- Other)

#### ABSTRACT

PURPOSE: To reduce processing cost and to improve stability by determining the centroid location of an object by performing the evaluation of localization and recognizing an attribute with the obtained centroid location as a center.

CONSTITUTION: An analog/digital conversion is performed for the image by the analog signal surrounded by a camera, etc., in an image input part 1 and the image becomes the original image 5 by a digital signal. This original image 5 is delivered to a preprocessing part 2, a preprocessing is performed for the image, the image becomes the preprocessed image where high frequency noise and the slow luminance change in the image are removed, and the image is inputted in an object extraction part 3 and an object recognition part 4. In the object extraction part 3, the localization of the inputted preprocessed image 6 is remarked, the centroid location 7 of an object is extracted and it is delivered to the object recognition part 4. In the object recognition part 4, the attribute 8 of the object is extracted from the centroid location 7 of this object and the preprocessed image 6 inputted from the preprocessing part 2 and the attribute is outputted to the outside. When the object extraction part 3 extracts plural objects, the attribute 8 can be recognized in parallel in the object recognition part 4.

18/5/2 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2004 JPO & JAPIO. All rts. reserv.

02979291 \*\*Image available\*\*  
MOVING PICTURE ENCODING DEVICE

PUB. NO.: 01-276891 [JP 1276891 A]  
PUBLISHED: November 07, 1989 ( 19891107)  
INVENTOR(s): HARASAKI HIDENOBU  
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 63-105141 [JP 88105141]  
FILED: April 27, 1988 (19880427)  
INTL CLASS: [4] H04N-007/13  
JAPIO CLASS: 44.6 (COMMUNICATION -- Television)  
JOURNAL: Section: E, Section No. 881, Vol. 14, No. 51, Pg. 14, January 30, 1990 (19900130)

#### ABSTRACT

PURPOSE: To suppress an encoding delay at several tens of milliseconds by thinning the output of a pre - filter, which eliminates noise or controls a band for a digital moving picture input at plural channels, in units of a frame, generating and encoding the multiplexed moving picture, and separating the output to plural pieces again.

CONSTITUTION: **Pre - filters** 4, 5 and 6 to eliminate the **noise** and to control the band for the **digital** moving **picture** input at the plural channels, and a multiplexing circuit 7 to generate one multiplexed moving picture from the plural pre-filter outputs by thinning the pre-filter output in units of a field or the frame, and multiplexing it are provided. Further, the output of an encoding circuit 8 to encode the output of the multiplexing circuit 7 is separated to the plural pieces again. Thus, a transmitting buffer to even generated information is replaced with a packet assembly circuit, the generated information becomes a short packet, and transferred in several tens of milliseconds.

18/5/3 (Item 3 from file: 347)

DIALOG(R)File 347:JAPIO

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02819970 \*\*Image available\*\*

FACSIMILE EQUIPMENT

PUB. NO.: 01-117570 [JP 1117570 A]

PUBLISHED: May 10, 1989 ( 19890510)

INVENTOR(s): MOTOMIYA TAKAHIRO

APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP  
(Japan)

APPL. NO.: 62-275272 [JP 87275272]

FILED: October 30, 1987 (19871030)

INTL CLASS: [4] H04N-001/40

JAPIO CLASS: 44.7 (COMMUNICATION -- Facsimile)

JOURNAL: Section: E, Section No. 804, Vol. 13, No. 359, Pg. 41, August  
10, 1989 (19890810)

#### ABSTRACT

PURPOSE: To obtain a visually excellent picture by superimposing a multi-gradation **digital** **picture** data of a read original on a pseudo random number and emphasizing a high spatial **frequency** of the picture data as the binarized **pre - processing**.

CONSTITUTION: An analog picture data read by an original read section 1 is converted into a multi-gradation **digital** **picture** data by an AD conversion section 2 and two paths for binarization are selected alternatively by a selector 3. The high spatial frequency is emphasized in a binary picture data by a binary picture 2-dimension filter 4 and the data is binarized by a binarization circuit 6 having a nonlinear slice level. High frequency emphasis specific to the intermediate tone is applied to the intermediate picture data by an intermediate picture 2-dimension filter 5 and the result is superimposed on a pseudo random number generated by a dither matrix circuit 10 and binarized by a binarizing circuit 7 having a fixed slice level. Then either the binary picture data or the intermediate tone picture data is selected by a selector 8.

18/5/4 (Item 4 from file: 347)

DIALOG(R)File 347:JAPIO

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02644579 \*\*Image available\*\*

METHOD FOR RESTORING IMAGE

PUB. NO.: 63-261479 [JP 63261479 A]

PUBLISHED: October 28, 1988 ( 19881028)

INVENTOR(s): MINAMI KEIKO

MATSUBA IKUO

APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP  
(Japan)

APPL. NO.: 62-095109 [JP 8795109]

FILED: April 20, 1987 (19870420)

INTL CLASS: [4] G06F-015/68; G06F-015/66

JAPIO CLASS: 45.4 (INFORMATION PROCESSING -- Computer Applications)

JOURNAL: Section: P, Section No. 831, Vol. 13, No. 75, Pg. 158,



February 21, 1989 (19890221)

ABSTRACT

PURPOSE: To execute edge detection and noise removal in a way compatible with each other by determining the repeated number of times for removing the **noise** of an image and holding features without executing **preprocessing** by using only input image data.

CONSTITUTION: An electric signal from an ITV camera picking up an object 11 to be observed is converted into **digital image** data by an A/D conversion part 14 in an image processor 13 and stored in a source image data file 15. The source image data is read out from the file 15 and an image restoration processing part 16 executes stochastic restoration processing based upon image energy by controlling the repeated number of times based upon the comparison of image energy and stores restored image data in a file 18 every repeat to update the image data. Consequently, noise can be removed without dulling the edge. Thus, both edge detection and noise removal can be attained.

18/5/5 (Item 5 from file: 347)

DIALOG(R)File 347:JAPIO

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02506392 \*\*Image available\*\*

METHOD FOR SUB-SAMPLING IMAGE

PUB. NO.: 63-123292 [JP 63123292 A]

PUBLISHED: May 27, 1988 ( 19880527)

INVENTOR(s): SHIBATA AKIO  
UNO YOSHIHIRO  
INOUE IKUO

APPLICANT(s): MATSUSHITA ELECTRIC IND CO LTD [000582] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 61-269117 [JP 86269117]

FILED: November 12, 1986 (19861112)

INTL CLASS: [4] H04N-007/13; H04N-001/41

JAPIO CLASS: 44.6 (COMMUNICATION -- Television); 44.7 (COMMUNICATION -- Facsimile)

JOURNAL: Section: E, Section No. 666, Vol. 12, No. 375, Pg. 68,  
October 07, 1988 (19881007)

ABSTRACT

PURPOSE: To minimize an interpolating error by using alternately a vertical lattice sampling and a zigzag lattice sampling when the number of picture elements is decreased by the sub-sampling.

CONSTITUTION: An input image signal 1 is sampled through an A/D converter with a sampling frequency  $f(\text{sub } s)$  and converted to an **digital input image** signal 3. After the signal 3 suppresses the high **frequency** component to exceed  $f(\text{sub } s)/2$  by a **pre - filter** 4, a vertical lattice sampling and a zigzag lattice sampling are alternately executed three times or above so that the water and the picture element interval in the vertical direction can be equal by an equal interval sub-sampler 6. A sub-sampled sampling output image signal 7 is converted to a digital code 9 with an encoder 8. The code 9 is sent through a transmission line 10 to a decoder 12 and converted to a decoder output image signal 13. The signal 13 comes to be a reproducing picture signal 15 while the picture element is interpolated by an interpolating filter 14.

18/5/6 (Item 6 from file: 347)

DIALOG(R)File 347:JAPIO

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01733086

PROCESSING METHOD OF PICTURE SIGNAL

PUB. NO.: 60-211586 [JP 60211586 A]  
PUBLISHED: October 23, 1985 ( 19851023)  
INVENTOR(s): OKAJIMA KENJI  
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 59-068020 [JP 8468020]  
FILED: April 05, 1984 (19840405)  
INTL CLASS: [4] G06K-009/62  
JAPIO CLASS: 45.3 (INFORMATION PROCESSING -- Input Output Units); 44.6  
(COMMUNICATION -- Television)  
JOURNAL: Section: P, Section No. 439, Vol. 10, No. 74, Pg. 11, March  
25, 1986 (19860325)

#### ABSTRACT

PURPOSE: To apply pattern recognition immune to deformation of a pattern such as rotation and expansion/compression and position shift of the pattern by applying pattern matching after pattern conversion of power spectrum of a picture signal.

CONSTITUTION: A two-dimensional discrete Fourier transformation is applied to a **picture** signal of two-dimension or a two-dimensional space **frequency** power **spectrum** thereof and a **pre - processing** before being converted into a power spectrum by using the logarithm of an angle and a radius when the two-dimensional space frequency is displayed by a polar coordinate as parameter. The pattern obtained in this way and the standard pattern applied with similar pre-processing in advance are checked for overlapping by means of the analog matching method. As a result strong pattern recognition immune to the rotation and expansion/ compression of the pattern.

18/5/7 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
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015939459 \*\*Image available\*\*  
WPI Acc No: 2004-097300/200410  
Related WPI Acc No: 1998-110853  
XRPX Acc No: N04-077475

**Article of manufacture comprising recorded medium storing digital watermark message encoding program, embeds exact length of watermark message in digital signal at identified watermarking locations**

Patent Assignee: COOPERMAN M S (COOP-I); MOSKOWITZ S A (MOSK-I)

Inventor: COOPERMAN M S; MOSKOWITZ S A

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No      | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|----------------|------|----------|---------------|------|----------|----------|
| US 20030219143 | A1   | 20031127 | US 96677435   | A    | 19960702 | 200410 B |
|                |      |          | US 99281279   | A    | 19990330 |          |
|                |      |          | US 2003369344 | A    | 20030218 |          |

Priority Applications (No Type Date): US 2003369344 A 20030218; US 96677435 A 19960702; US 99281279 A 19990330

Patent Details:

| Patent No      | Kind | Lan | Pg | Main IPC    | Filing Notes                    |
|----------------|------|-----|----|-------------|---------------------------------|
| US 20030219143 | A1   |     | 17 | G06K-009/00 | Cont of application US 96677435 |
|                |      |     |    |             | CIP of application US 99281279  |
|                |      |     |    |             | Cont of patent US 5889868       |
|                |      |     |    |             | CIP of patent US 6522767        |

Abstract (Basic): US 20030219143 A1

NOVELTY - An exact length of a **watermark** message is determined and embedded in a digital signal in the potential **watermarking** locations identified in the signal.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) a **watermark** message encoding method;
- (2) a **watermark** decoding process; and

(3) a digital **watermark** encoding system.

USE - For implementing digital **watermark** in the content of copyrighted distribution and storage medium such as compact disk, cable television, satellite, audio tape, stereo amplifier, and in music, video and operating systems.

ADVANTAGE - More optimal models are obtained to design **watermark** systems that are tamper-resistant given the number and breadth of existent digitized sample options with different frequency and time components. The highest quality of a given content signal is maintained as it is mastered with the **watermark** suitably hidden taking into account usage of digital **filters** and **error** correction. Forces degradation of the content signal when attempts are made to remove the **watermarks**.

DESCRIPTION OF DRAWING(S) - The figure shows a flowchart illustrating a digital **watermark** information encoding process.

pp; 17 DwgNo 1/2

Title Terms: ARTICLE; MANUFACTURE; COMPRISE; RECORD; MEDIUM; STORAGE; DIGITAL; **WATERMARK**; MESSAGE; ENCODE; PROGRAM; EMBED; EXACT; LENGTH; **WATERMARK**; MESSAGE; DIGITAL; SIGNAL; IDENTIFY; **WATERMARK**; LOCATE

Derwent Class: T01; W02; W03; W04

International Patent Class (Main): G06K-009/00

File Segment: EPI

18/5/8 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014821522

WPI Acc No: 2002-642228/200269

Related WPI Acc No: 1995-200530; 1996-518986; 1997-310156; 1998-009129;

1998-110064; 1998-286225; 1999-204782; 1999-444465; 2000-013122;  
2000-194736; 2000-195398; 2000-365779; 2000-490584; 2001-022904;  
2001-335855; 2001-357503; 2001-374044; 2001-397673; 2001-425330;  
2001-570080; 2001-580828; 2001-581298; 2001-581665; 2001-595705;  
2001-607222; 2002-011177; 2002-041658; 2002-082807; 2002-154357;  
2002-163681; 2002-179003; 2002-188040; 2002-205513; 2002-224088;  
2002-226224; 2002-235400; 2002-236852; 2002-238913; 2002-254659;  
2002-256143; 2002-268672; 2002-361599; 2002-370756; 2002-382444;  
2002-391512; 2002-392708; 2002-403568; 2002-405083; 2002-413035;  
2002-435593; 2002-470507; 2002-498079; 2002-498923; 2002-507125;  
2002-508021; 2002-556177; 2002-598923; 2002-636862; 2002-654787;  
2002-672857; 2002-673567; 2002-691185; 2002-697772; 2003-045908;  
2003-074123; 2003-090293; 2003-137905; 2003-174573; 2003-199024;  
2003-238411; 2003-266622; 2003-268467; 2003-275465; 2003-327510;  
2003-331365; 2003-353776; 2003-362315; 2003-391983; 2003-392393;  
2003-401297; 2003-418353; 2003-418436; 2003-419904; 2003-465734;  
2003-492022; 2003-557490; 2003-587433; 2003-597620; 2003-615418;  
2003-615425; 2003-655604; 2003-655616; 2003-655715; 2003-656012;  
2003-658647; 2003-659691; 2003-687554; 2003-707329; 2003-730410;  
2003-767701; 2003-777048; 2003-800216; 2003-800961; 2003-802603;  
2003-829683; 2003-897231; 2004-031964; 2004-059015; 2004-059948;  
2004-070353; 2004-098221; 2004-119479; 2004-155399; 2004-179244;  
2004-179245; 2004-303569; 2004-386915

XRFX Acc No: N02-507607

Steganographically **embedded copyright data decoding method involves counteracting errors introduced into processed content data, during data decoding**

Patent Assignee: RHOADS G B (RHOA-I); DIGIMARC CORP (DIGI-N)

Inventor: RHOADS G B

Number of Countries: 001 Number of Patents: 002

Patent Family:

| Patent No      | Kind | Date     | Applicat No | Kind | Date     | Week     |
|----------------|------|----------|-------------|------|----------|----------|
| US 20020085718 | A1   | 20020704 | US 93154866 | A    | 19931118 | 200269 B |
|                |      |          | US 94215289 | A    | 19940317 |          |
|                |      |          | US 94327426 | A    | 19941021 |          |
|                |      |          | US 95436134 | A    | 19950508 |          |
|                |      |          | US 97951858 | A    | 19971016 |          |

|            |    |          |               |   |          |        |
|------------|----|----------|---------------|---|----------|--------|
|            |    |          | US 2000482752 | A | 20000113 |        |
|            |    |          | US 2001963343 | A | 20010925 |        |
| US 6654887 | B2 | 20031125 | US 93154866   | A | 19931118 | 200403 |
|            |    |          | US 94215289   | A | 19940317 |        |
|            |    |          | US 94327426   | A | 19941021 |        |
|            |    |          | US 95436134   | A | 19950508 |        |
|            |    |          | US 97951858   | A | 19971016 |        |
|            |    |          | US 2000482752 | A | 20000113 |        |
|            |    |          | US 2001963343 | A | 20010925 |        |

Priority Applications (No Type Date): US 95436134 A 19950508; US 93154866 A 19931118; US 94215289 A 19940317; US 94327426 A 19941021; US 97951858 A 19971016; US 2000482752 A 20000113; US 2001963343 A 20010925

Patent Details:

| Patent No      | Kind | Lan | Pg | Main IPC     | Filing Notes   |
|----------------|------|-----|----|--------------|--|
| US 20020085718 | A1   |     | 58 | H04N-007/167 | CIP of application US 93154866<br>CIP of application US 94215289<br>CIP of application US 94327426<br>Cont of application US 95436134<br>Div ex application US 97951858<br>Div ex application US 2000482752<br>Cont of patent US 5748763<br>CIP of patent US 5768426<br>Div ex patent US 6026193<br>Div ex patent US 6330335 |
| US 6654887     | B2   |     |    | H04L-009/34  | CIP of application US 93154866<br>CIP of application US 94215289<br>CIP of application US 94327426<br>Cont of application US 95436134<br>Div ex application US 97951858<br>Div ex application US 2000482752<br>Cont of patent US 5748763<br>CIP of patent US 5768426<br>Div ex patent US 6026193<br>Div ex patent US 6330335 |

Abstract (Basic): US 20020085718 A1

NOVELTY - An error information relating to errors, introduced into the processed content data is obtained. When decoding the content data, the **errors** are counteracted using a **filter**.

USE - For decoding **steganographically** embedded copyright data from multimedia data.

ADVANTAGE - Enables reliable decoding of **steganographically** embedded copyright information, by counteracting the computed media content.

pp; 58 DwgNo 0/27

Title Terms: EMBED; DATA; DECODE; METHOD; COUNTERACT; ERROR; INTRODUCING; PROCESS; CONTENT; DATA; DATA; DECODE

Derwent Class: W02

International Patent Class (Main): H04L-009/34; H04N-007/167

International Patent Class (Additional): G06K-009/46

File Segment: EPI

18/5/9 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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011104396 \*\*Image available\*\*

WPI Acc No: 1997-082321/ 199708

XRFX Acc No: N97-068184

Image forming appts. e.g. copier, facsimile, printer for recording image using ink jet recording method - has pre - processing liq. that records data to recording medium using pre - processing liq. that contains interfacial active material

Patent Assignee: CANON KK (CANO )

Number of Countries: 001 Number of Patents: 002

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| JP 8323968 | A    | 19961210 | JP 95135024 | A    | 19950601 | 199708 B |
| JP 3224491 | B2   | 20011029 | JP 95135024 | A    | 19950601 | 200171   |

Priority Applications (No Type Date): JP 95135024 A 19950601

Patent Details:

| Patent No  | Kind | Lan | Pg | Main IPC    | Filing Notes                     |
|------------|------|-----|----|-------------|----------------------------------|
| JP 8323968 | A    |     | 10 | B41J-002/01 |                                  |
| JP 3224491 | B2   |     | 9  | B41J-002/01 | Previous Publ. patent JP 8323968 |

Abstract (Basic): JP 8323968 A

The appts. includes an image recorder which records an image on a recording medium using a recording agent. A **pre - processing** unit discharges a transparent **pre - processing** liq. that makes the recording medium to be insoluble with a dye in a recording agent.

The **pre - processing** liq. contains an interfacial active material. The **pre - processing** unit records the data to the recording medium using the **pre - processing** liq.

ADVANTAGE - Does not make **pre - processing** liq. to interfere with actual recorded image since **pre - processing** liq. is transparent. Does not increase cost since new component is not needed. Visualises data corresp. to main body since only portion to which **pre - processing** liq. is applied floats to recording medium like **watermark**. Visualises data corresp. to appts. by applying Ph indicator to recording medium since acid matter is contained in **pre - processing** liq. Clarifies data recognition during visualisation since inhibited thing is mixed with **pre - processing** liq. Offers appts. with small setting area since **pre - processing** liq. is contained not in ink recorder but in carriage whose width is small.

Dwg.2/5

Title Terms: IMAGE; FORMING; APPARATUS; COPY; FACSIMILE; PRINT; RECORD; IMAGE; INK; JET; RECORD; METHOD; PRE; PROCESS; LIQUID; RECORD; DATA; RECORD; MEDIUM; PRE; PROCESS; LIQUID; CONTAIN; INTERFACE; ACTIVE; MATERIAL

Derwent Class: P75; T04

International Patent Class (Main): B41J-002/01

File Segment: EPI; EngPI

18/5/10 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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011054005 \*\*Image available\*\*

WPI Acc No: 1997-031929/ 199703

XRPX Acc No: N97-027175

Digital camera appts interfaced with PC, workstation, video conference, video telephone - generates assistance information based on length of blanking period output by blanking length output part

Patent Assignee: SHARP KK (SHAF )

Number of Countries: 001 Number of Patents: 002

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| JP 8294033 | A    | 19961105 | JP 9595042  | A    | 19950420 | 199703 B |
| JP 3370206 | B2   | 20030127 | JP 9595042  | A    | 19950420 | 200315   |

Priority Applications (No Type Date): JP 9595042 A 19950420

Patent Details:

| Patent No  | Kind | Lan | Pg | Main IPC     | Filing Notes                     |
|------------|------|-----|----|--------------|----------------------------------|
| JP 8294033 | A    |     | 7  | H04N-005/225 |                                  |
| JP 3370206 | B2   |     | 7  | H04N-005/225 | Previous Publ. patent JP 8294033 |

Abstract (Basic): JP 8294033 A

The appts has an image pick-up element which converts light rays from a photographed object into an electrical signal. The **noise** in the output electric signal is suppressed and **preprocessing** such as automatic gain control is performed. Then, an A/D converter converts the analog electric signal to a digital signal. A video signal

processing part performs a luminance signal processing and a chrominance signal processing to the digital signal output from the A/D converter. An image format conversion part converts the **digital image** data output from the video signal processing part into various image formats. A control part controls the above mentioned operation.

The output of the image format conversion part is fed to a digital interface part. An assistance information input part inputs assistance information generated by an external assistance information part into the digital interface part. A blanking length output part outputs the length of the blanking period required for the external assistance information generation part. The information generation part generates assistance information based on the length of the blanking period.

ADVANTAGE - Provides digital interface circuit having simple circuitry.

Dwg.1/10

Title Terms: DIGITAL; CAMERA; APPARATUS; INTERFACE; VIDEO; CONFER; VIDEO; TELEPHONE; GENERATE; ASSIST; INFORMATION; BASED; LENGTH; BLANK; PERIOD; OUTPUT; BLANK; LENGTH; OUTPUT; PART

Index Terms/Additional Words: CCD

Derwent Class: W01; W02; W04

International Patent Class (Main): H04N-005/225

File Segment: EPI

18/5/11 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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010973887 \*\*Image available\*\*

WPI Acc No: 1996-470836/ 199647

XRFX Acc No: N96-397059

**Image format converter in video camera for PC, video telephone, video conference - in which predetermined value is selected from bit memory followed by converting selected data into suitable format**

Patent Assignee: SHARP KK (SHAF )

Number of Countries: 001 Number of Patents: 002

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| JP 8237607 | A    | 19960913 | JP 9535014  | A    | 19950223 | 199647 B |
| JP 3284164 | B2   | 20020520 | JP 9535014  | A    | 19950223 | 200236   |

Priority Applications (No Type Date): JP 9535014 A 19950223

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|-----------|------|-----|----|----------|--------------|
|-----------|------|-----|----|----------|--------------|

|            |   |  |   |             |  |
|------------|---|--|---|-------------|--|
| JP 8237607 | A |  | 9 | H04N-007/01 |  |
|------------|---|--|---|-------------|--|

|            |    |  |    |             |                                  |
|------------|----|--|----|-------------|----------------------------------|
| JP 3284164 | B2 |  | 11 | H04N-007/01 | Previous Publ. patent JP 8237607 |
|------------|----|--|----|-------------|----------------------------------|

Abstract (Basic): JP 8237607 A

The converter has an image pick up unit that converts light signal of image data from a photographed object to an electric signal. A **preprocessing** unit performs **noise** control and an automatic gain control. An A/D converter converts the output signal from the preprocessing unit to a digital signal. Then a video signal processing unit performs luminance signal processing and chrominance signal processing on the output digital data from the A/D converter. A first deleting unit deletes suitable dots from the right and left end of a screen and a second deleting unit deletes suitable dots from the upper and lower sides of the screen. A processing unit then performs operation between the adjoining dots and performs transformation of the number of dots.

Then a bit memory stores the bit that shows the weighting factor of the processing operation, effective timing of the data in the transformation of combination of the original number of dots and the target number of conversion dots. Then a selection unit selects and produces predetermined value from the memory. An image format converting unit converts the **digital image** data output to suitable formats.

ADVANTAGE - Avoids usage of frame memory. Simplifies composition of

circuit. Enables efficient usage of memory. Reduces deterioration of clarity at time of converting data to half of its size.

Dwg.1/21

Title Terms: IMAGE; FORMAT; CONVERTER; VIDEO; CAMERA; VIDEO; TELEPHONE; VIDEO; CONFER; PREDETERMINED; VALUE; SELECT; BIT; MEMORY; FOLLOW; CONVERT; SELECT; DATA; SUIT; FORMAT

Derwent Class: W02; W04

International Patent Class (Main): H04N-007/01

File Segment: EPI

18/5/12 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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010934582 \*\*Image available\*\*

WPI Acc No: 1996-431532/ 199643

**Remote controlling appts. using hand-signals for elderly, disabled people**

**- removes noise from sensed hand sign image compares image to identify**

**hand sign to operate instrument according to hand sign**

Patent Assignee: SAMSUNG ELECTRONICS CO LTD (SMSU )

Inventor: JONG J

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| KR 9411498 | B1   | 19941219 | KR 9115713  | A    | 19910909 | 199643 B |

Priority Applications (No Type Date): KR 9115713 A 19910909

Patent Details:

| Patent No  | Kind | Lan Pg | Main IPC    | Filing Notes |
|------------|------|--------|-------------|--------------|
| KR 9411498 | B1   | 1      | H04Q-009/00 |              |

Abstract (Basic): KR 9411498 B

The appts. has a memory unit (21) for memorising an input hand sign. An image sensor (211) senses the hand sign. An image **pre - processor** (212) removes the **noise** of the sensed image and underlines the input image. A data processor (213) converts the input image to the **digital image** by quantising and sampling. A circuit (215) comparing and discriminates if the sensed image information is for the hand sign. A control circuit (215) operates an instrument according to the hand sign.

Dwg.1/1

Title Terms: REMOTE; CONTROL; APPARATUS; HAND; SIGNAL; ELDERLY; DISABLE; PEOPLE; REMOVE; NOISE; SENSE; HAND; SIGN; IMAGE; COMPARE; IMAGE; IDENTIFY; HAND; SIGN; OPERATE; INSTRUMENT; ACCORD; HAND; SIGN

Derwent Class: S05; T04; W03; W05

International Patent Class (Main): H04Q-009/00

File Segment: EPI

18/5/13 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

010843880 \*\*Image available\*\*

WPI Acc No: 1996-340833/ 199634

XRPX Acc No: N96-286915

**Intelligent document processing system - filters noise and converts to connected component to send to pre - processing unit to generate test image in text recognition unit and table file in table processing unit for output to display**

Patent Assignee: LGT LAB GEN TELECOM (LGTG-N)

Inventor: JANG B; JANG G; LIOU T; SHYU K; TSAY Y

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date     | Applicat No | Kind | Date     | Week     |
|-----------|------|----------|-------------|------|----------|----------|
| TW 275116 | A    | 19960501 | TW 95104539 | A    | 19950508 | 199634 B |

Priority Applications (No Type Date): TW 95104539 A 19950508

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC    | Filing Notes |
|-----------|------|-----|----|-------------|--------------|
| TW 275116 | A    |     | 21 | G06F-015/21 |              |

Abstract (Basic): TW 275116 A

The system comprises one system control unit to perform unit integration and data transfer. The document is converted to a **digital image** by the input unit to feed to a pre-processing unit. The **pre - processing** unit removes **noise** and converts the document image into a connected component.

A table processing unit extracts table features using the connected component as a basis. It performs one by one matching of all features with a stored table feature database to confirm if the document table is a new one. If the table is new, the table feature file and table image file are output and a text block is transmitted to a text recognition unit. If the table is not new, then only a text block of context is transmitted to the text recognition unit. The text recognition unit recognises the text block and transmits the result or converts it. The output unit receives the table image file sent from the table processing unit and the text file sent from the text recognition unit. It stores them and combines them to be converted as one document for printing or displaying.

USE/ADVANTAGE - Intelligent system. Filters noise.

Dwg.1/7

Title Terms: INTELLIGENCE; DOCUMENT; PROCESS; SYSTEM; FILTER; NOISE; CONVERT; CONNECT; COMPONENT; SEND; PRE; PROCESS; UNIT; GENERATE; TEST; IMAGE; TEXT; RECOGNISE; UNIT; TABLE; FILE; TABLE; PROCESS; UNIT; OUTPUT; DISPLAY

Derwent Class: T01; T04

International Patent Class (Main): G06F-015/21

File Segment: EPI

18/5/14 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009866371 \*\*Image available\*\*

WPI Acc No: 1994-146244/ 199418

XRPX Acc No: N94-115243

**Signal processing technique for digital television signals - segmenting sampled signal into sub-bands by filtering and frequency transforming to compress data**

Patent Assignee: FRANCE TELECOM (ETFR ); TELEDIFFUSION DE FRANCE (TELG ); TELEDIFFUSION DE FRANCE SA (TELG )

Inventor: MAU J; SOYER P

Number of Countries: 002 Number of Patents: 003

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| EP 595710  | A1   | 19940504 | EP 93402625 | A    | 19931026 | 199418 B |
| FR 2697704 | A1   | 19940506 | FR 9212930  | A    | 19921029 | 199421   |
| US 5610944 | A    | 19970311 | US 93143369 | A    | 19931029 | 199716   |

Priority Applications (No Type Date): FR 9212930 A 19921029

Cited Patents: 3.Jnl.Ref

Patent Details:

| Patent No  | Kind | Lan | Pg | Main IPC    | Filing Notes |
|------------|------|-----|----|-------------|--------------|
| EP 595710  | A1   | F   | 48 | H03H-017/02 |              |
| US 5610944 | A    |     | 41 | H04K-001/10 |              |
| FR 2697704 | A1   |     |    | H04L-005/00 |              |

Abstract (Basic): EP 595710 A

The procedure of segmentation into sub-bands includes subjecting each sample (E(n)) to processing in parallel in a number of channels. This is achieved by modulated prototype filtering by a periodic



function and sub-sampling by the number of sub-bands. The technique includes a modified polyphase filtering process (1,2) in combination with a frequency transform processing system (2,1). This provides a sub-band signals (Xk) for each corresponding order channel.

Reconstruction comprises the dual stages of frequency transform and polyphase filtering to deliver the reconstructed signal (Rec(n)). The modules are constructed using modulated orthogonal transform (MOT) filter or perfect reconstruction modulated filter (PRMF).

USE/ADVANTAGE - Data compression technique for **digital** television **image** signals. Reduced memory requirement.

Dwg.2a/10

Title Terms: SIGNAL; PROCESS; TECHNIQUE; DIGITAL; TELEVISION; SIGNAL;  
SEGMENT; SAMPLE; SIGNAL; SUB; BAND; FILTER; FREQUENCY; TRANSFORM;  
COMPRESS; DATA

Derwent Class: T01; U22; W02; W04

International Patent Class (Main): H03H-017/02; H04K-001/10; H04L-005/00

International Patent Class (Additional): H04N-001/40

File Segment: EPI

18/5/15 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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009359532 \*\*Image available\*\*

WPI Acc No: 1993-053011/ 199306

XRPX Acc No: N93-040558

**Digital video processing system with mixing pre-filter - includes two data channels, multiplication circuitry in at least one of data channels and circuitry for combining output of two channels**

Patent Assignee: SONY CORP AMERICA (SONY )

Inventor: HODGSON D O

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| US 5181100 | A    | 19930119 | US 91736006 | A    | 19910725 | 199306 B |

Priority Applications (No Type Date): US 91736006 A 19910725

Patent Details:

| Patent No  | Kind | Lan Pg | Main IPC    | Filing Notes |
|------------|------|--------|-------------|--------------|
| US 5181100 | A    | 20     | H04N-007/12 |              |

Abstract (Basic): US 5181100 A

The system includes two data channels, multiplication circuitry in at least one of the data channels for multiplying the data signal in that the channel by a multiplicative factor signal, and circuitry for combining the output of the data channels.

Each data signal to be multiplied is **prefiltered** in an anti-aliasing filter in order to remove high **frequency** components that would otherwise result in aliasing error during the multiplication operation. The anti-aliasing filter is pref. an adaptive finite impulse response filter which receives the multiplicative factor signal, and is transparent during times when the multiplicative factor signal has a constant value.

USE/ADVANTAGE - Combining digital data signals representing **digitised images** in manner avoiding aliasing effects.

Dwg.10/11

Title Terms: DIGITAL; VIDEO; PROCESS; SYSTEM; MIX; PRE; FILTER; TWO; DATA;  
CHANNEL; MULTIPLICATION; CIRCUIT; ONE; DATA; CHANNEL; CIRCUIT;  
COMBINATION; OUTPUT; TWO; CHANNEL

Derwent Class: U22; W04

International Patent Class (Main): H04N-007/12

File Segment: EPI

18/5/16 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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008705379 \*\*Image available\*\*

WPI Acc No: 1991-209400/ 199129

XRPX Acc No: N91-159837

**Image quality improving circuit for video recorder - uses adaptive frequency spectrum procedures with band width compression**

Patent Assignee: SAMSUNG ELECTRONICS CO LTD (SMSU ); SAMSUNG DENSHI KK (SMSU ); SAMSUNG ELECTRONICS CO (SMSU )

Inventor: SONG T; SONG D

Number of Countries: 005 Number of Patents: 007

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| DE 4039709 | A    | 19910711 | DE 4039709  | A    | 19901212 | 199129 B |
| GB 2241409 | A    | 19910828 | GB 9028025  | A    | 19901224 | 199135   |
| JP 4177994 | A    | 19920625 | JP 90405269 | A    | 19901221 | 199232   |
| US 5161030 | A    | 19921103 | US 90632083 | A    | 19901221 | 199247   |
| DE 4039709 | C    | 19921203 | DE 4039709  | A    | 19901212 | 199249   |
| KR 9205246 | B    | 19920629 | KR 8919316  | A    | 19891222 | 199308   |
| GB 2241409 | B    | 19940831 | GB 9028025  | A    | 19901224 | 199432   |

Priority Applications (No Type Date): KR 8919316 A 19891222

Patent Details:

| Patent No  | Kind | Lan | Pg | Main IPC    | Filing Notes |
|------------|------|-----|----|-------------|--------------|
| JP 4177994 | A    |     | 21 | H04N-009/80 |              |
| US 5161030 | A    |     | 12 | H04N-009/79 |              |
| DE 4039709 | C    |     | 11 | H04N-009/80 |              |
| KR 9205246 | B    |     |    | G11B-020/06 |              |
| GB 2241409 | B    |     |    | H04N-007/13 |              |

Abstract (Basic): DE 4039709 A

Picture quality is improved in video recorders through use of adaptive spectrum procedures associated with the recording and playback of colour video signals.

The video input (10) leads to a Y/C separator (1) which separates the luminance and chrominance components of the composite signal. An adaptive filter (3) separates the luminance signal dependent upon the level of movement. A generator (6) produces spectrum carrier signals dependent upon output from the filter (3). Other circuits include a low pass filter (5), FM modulator (7), a first adder (12) to provide output signal to the tape head, a low pass filter (9), and a processor (8) to combine colour signal (c) and tape modulation signal.

ADVANTAGE - Compatible with usual VTR.

Dwg.2/7

Title Terms: IMAGE; QUALITY; IMPROVE; CIRCUIT; VIDEO; RECORD; ADAPT; FREQUENCY; SPECTRUM; PROCEDURE; BAND; WIDTH; COMPRESS

Index Terms/Additional Words: VTR; VCR

Derwent Class: W04

International Patent Class (Main): G11B-020/06; H04N-007/13; H04N-009/79; H04N-009/80

International Patent Class (Additional): H03M-007/30; H04N-009/83; H04N-011/02

File Segment: EPI

18/5/17 (Item 11 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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007973355 \*\*Image available\*\*

WPI Acc No: 1989-238467/ 198933

Related WPI Acc No: 1989-170929; 1989-209888; 1989-209889; 1989-217923; 1989-217924; 1989-217935

XRPX Acc No: N92-279383

**Image processor - detects, smooths and enhances image edges in relation to adjacent image block NoAbstract Dwg 0/8**

Patent Assignee: CANON KK (CANO )

Inventor: MAEDA M; YOSHIDA T

Number of Countries: 002 Number of Patents: 005

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| JP 1173971 | A    | 19890710 | JP 87328430 | A    | 19871226 | 198933 B |
| US 5157743 | A    | 19921020 | US 88261276 | A    | 19881024 | 199245   |
|            |      |          | US 92849839 | A    | 19920312 |          |
| US 5384868 | A    | 19950124 | US 88261276 | A    | 19881024 | 199510   |
|            |      |          | US 92849839 | A    | 19920312 |          |
|            |      |          | US 92881871 | A    | 19920512 |          |
| US 5659636 | A    | 19970819 | US 88261276 | A    | 19881024 | 199739   |
|            |      |          | US 92849839 | A    | 19920312 |          |
|            |      |          | US 92881871 | A    | 19920512 |          |
|            |      |          | US 94247671 | A    | 19940712 |          |
| US 5721791 | A    | 19980224 | US 88261276 | A    | 19881024 | 199815   |
|            |      |          | US 92849839 | A    | 19920312 |          |
|            |      |          | US 92881871 | A    | 19920512 |          |
|            |      |          | US 94311597 | A    | 19940923 |          |

Priority Applications (No Type Date): JP 87328430 A 19871226; JP 87270232 A 19871028; JP 87304612 A 19871203; JP 87304613 A 19871203; JP 87314093 A 19871214; JP 87314094 A 19871214; JP 87314095 A 19871214

Patent Details:

| Patent No  | Kind | Lan | Pg | Main IPC    | Filing Notes  |
|------------|------|-----|----|-------------|---|
| JP 1173971 | A    |     | 7  |             |   |
| US 5157743 | A    |     | 76 | G06K-009/38 | Cont of application US 88261276<br>patent JP 1114281<br>patent JP 1146485<br>patent JP 1146486<br>patent JP 1157167<br>patent JP 1157168<br>patent JP 1157184   |
| US 5384868 | A    |     | 76 | G06K-009/36 | Cont of application US 88261276<br>Div ex application US 92849839<br>patent JP 1114281<br>patent JP 1146485<br>patent JP 1146486<br>patent JP 1157167<br>patent JP 1157168<br>patent JP 1157184   |
| US 5659636 | A    |     | 74 | G06K-009/38 | Div ex patent US 5157743<br>Cont of application US 88261276<br>Div ex application US 92849839<br>Div ex application US 92881871<br>patent JP 1114281<br>patent JP 1146485<br>patent JP 1146486<br>patent JP 1157167<br>patent JP 1157168<br>patent JP 1157184 |
| US 5721791 | A    |     | 74 | G06K-009/36 | Div ex patent US 5157743<br>Div ex patent US 5384868<br>Cont of application US 88261276<br>Div ex application US 92849839<br>Div ex application US 92881871<br>Div ex patent US 5157743<br>Div ex patent US 5384868   |

Abstract (Basic): US 5157743 A

The image information coding appts. has a block generator for dividing **digital image** data into blocks, each block having a predetermined size. A transforming device performs preprocessing of the divided block image data to generate a number of frequency components corresp., to the image data. A selector decides on one of a number of categories on the basis of the frequency component.

An extractor obtains two sets of frequency components in accordance with the selected category. A first quantiser quantises the first set of frequency components, and a second quantiser operate on the second set of frequency components.

USE/ADVANTAGE - For improving coding efficiency without causing

degradation of image multi value data. Can maintain characteristic features of image blocks and perform efficient vector coding, partic. for halftone and colour images. (First major country equivalent to JP1114281, JP1146485, JP1146486, JP1157167, JP1157168, JP1173971  
Title Terms: IMAGE; PROCESSOR; DETECT; SMOOTH; ENHANCE; IMAGE; EDGE; RELATED; ADJACENT; IMAGE; BLOCK; NOABSTRACT  
Derwent Class: T01; W02; W04  
International Patent Class (Main): G06K-009/36; G06K-009/38  
International Patent Class (Additional): G06F-015/68; H04N-001/40  
File Segment: EPI

18/5/18 (Item 12 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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007857990 \*\*Image available\*\*  
WPI Acc No: 1989-123102/ 198917  
XRPX Acc No: N89-093814

TV signals image data reduction e.g. for display telephony - using pre - processing to form image-to-image prediction error signal

Patent Assignee: SIEMENS AG (SIEI )

Inventor: STROBACH P

Number of Countries: 002 Number of Patents: 003

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| DE 3733038 | A    | 19890420 | DE 3733038  | A    | 19870930 | 198917 B |
| JP 1165282 | A    | 19890629 | JP 8891239  | A    | 19880412 | 198932   |
| DE 3733038 | C2   | 19940105 | DE 3733038  | A    | 19870930 | 199401   |

Priority Applications (No Type Date): DE 3733038 A 19870930

Patent Details:

| Patent No  | Kind | Lan Pg | Main IPC     | Filing Notes |
|------------|------|--------|--------------|--------------|
| DE 3733038 | A    | 32     |              |              |
| DE 3733038 | C2   | 22     | H04N-007/137 |              |

Abstract (Basic): DE 3733038 A

Method of reducing the image data for TV signals involves **preprocessing** to form a image-to-image prediction **error** signal and requires a QSD PCM coder on the transmission side. The coder contains basic cells in both a 2x2 medium value processor of a QSD PCM-CPU and in a bit count logic. The 2x2 medium value processor is fed into its input from the image store, i.e. the decoded 'predecessor' picture image, as well from the picture store i.e. the image to be coded, via two 256x8 bit buffer store pairs, which have at their disposal a simple write and 16-times read capacity.

The image-to-image prediction **error** signal is coded without the need for further **preprocessing** by braking down into blocks of variable size i.e. so-called quad-tree data structure.

USE/ADVANTAGE - Narrow band ISDN display telephone networks-Improved image (picture) quatity.

File 348:EUROPEAN PATENTS 1978-2004/Jul W03

(c) 2004 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20040722,UT=20040715

(c) 2004 WIPO/Univentio

| Set | Items | Description  |
|-----|-------|--|
| S1  | 4150  | WATERMARK??? OR WATER()MARK???? OR (ELECTRONIC OR DIGITAL)-(1W) (MARK? ? OR MARKING? ?) OR STEGANOGRAPH? |
| S2  | 18662 | PREFILTER? OR PREPROCESS??? OR PRE() (FILTER??? OR PROCESS?-??)  |
| S3  | 1903  | S2(10N) (FREQUENC??? OR SPECTRUM? ? OR ERROR? ? OR NOISE)  |
| S4  | 58562 | (FILTER??? OR WHITEN???) (10N) (FREQUENC??? OR SPECTRUM? ? OR ERROR? ? OR NOISE)                         |
| S5  | 36336 | FREQUENC??? (5N) (SPECTRUM OR NOISE OR ERROR? ?)   |
| S6  | 20472 | (DIGITAL OR DIGITIZED OR DIGITISED) (1W) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? ?)           |
| S7  | 15    | S1(50N)S3  |
| S8  | 117   | S1(50N)S4  |
| S9  | 99    | S1(50N)S2  |
| S10 | 30    | S6(50N)S3  |
| S11 | 406   | S6(50N)S4  |
| S12 | 337   | S6(50N)S2  |
| S13 | 45    | S7 OR S10  |
| S14 | 25    | S13 AND AC=US/PR   |
| S15 | 2     | S14 AND AY=(1965:1996)/PR  |
| S16 | 6     | S13 AND PY=1965:1996   |
| S17 | 7     | S15:S16  |
| S18 | 172   | S8:S9 NOT S13  |
| S19 | 76    | S18 AND AC=US/PR   |
| S20 | 5     | S19 AND AY=(1965:1996)/PR  |
| S21 | 1     | S18 AND PY=1965:1996   |
| S22 | 13    | S17 OR S20:S21   |
| S23 | 14    | S2(10N) (IMAGE? ? OR PHOTO? ? OR PHOTOGRAPH? ? OR PICTURE? -?) (10N)S5                                   |
| S24 | 27    | S22:S23  |

24/3,K/1 (Item 1 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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01376684

Method and apparatus for improving signal to noise ratio using wavelet decomposition and frequency thresholding  
Verfahren und Vorrichtung zur Verbesserung des Signal-Rauschabstandes unter Verwendung von Wellenstückchen und Schwellenwertverarbeitung von Frequenzen

Appareil et procede d'amelioration du rapport signal/bruit a l'aide d'ondelettes et de seuillage en frequence

PATENT ASSIGNEE:

ITT MANUFACTURING ENTERPRISES, INC., (209959), 1105 North Market Street, Suite 1217, Wilmington, Delaware 19801, (US), (Applicant designated States: all)

INVENTOR:

Vincent, David Lloyd, 6242 Warner Avenue, Apt. 24B, Huntington Beach, California 92647, (US)

LEGAL REPRESENTATIVE:

Esser, Wolfgang (75574), ITT Industries Regional Patent Office  
Cannonstrasse 1, 71384 Weinstadt, (DE)

PATENT (CC, No, Kind, Date): EP 1170698 A2 020109 (Basic)  
EP 1170698 A3 030917

APPLICATION (CC, No, Date): EP 2001110360 010426;

PRIORITY (CC, No, Date): US 563453 000503

DESIGNATED STATES: DE; FR; GB

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: G06T-005/10; G06T-005/00

ABSTRACT WORD COUNT: 55

NOTE:

Figure number on first page: 4

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | 200202 | 1656       |
| SPEC A                             | (English) | 200202 | 4690       |
| Total word count - document A      |           |        | 6346       |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 6346       |

...SPECIFICATION mechanical vibration reduction, precision low noise test measurement, environmental background noise cancellation, seismic data analysis **noise** reduction, Very-Low- **Frequency** communication **noise** reduction, television signal enhancement, superresolution imaging **preprocessing**, radio-astronomy noise cancellation, astronomical instrument **image** noise cancellation, computer network communications signal enhancement, and Internet/Intranet communications signal enhancement.

Figure 17...

24/3,K/2 (Item 2 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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01140670

VIDEO IMAGE BAND ADJUSTMENT METHOD, AND FILTER ARRANGEMENT

ABSTIMMUNGSVERFAHREN FUR VIDEOBILDBANDE UND FILTERVORRICHTUNG

PROCEDE D'AJUSTEMENT DE LA BANDE D'IMAGES VIDEO ET AGENCEMENT DE FILTRE

PATENT ASSIGNEE:

Elektrobit Oy, (1623051), Tutkijantie 8, 90570 Oulu, (FI), (Proprietor designated states: all)

INVENTOR:

MUSTONEN, Juha, Pikisaarentie 1 E 14, FIN-90100 Oulu, (FI)

SILVEN, Olli, Oivantie 14, FIN-90580 Oulu, (FI)

LEGAL REPRESENTATIVE:

Karppinen, Olavi Arto et al (85101), Kolster Oy Ab, P.O. Box 148, Iso  
 Roobertinkatu 23, 00121 Helsinki, (FI)  
 PATENT (CC, No, Kind, Date): EP 995304 A2 000426 (Basic)  
 EP 995304 B1 030102  
 WO 99001979 990114  
 APPLICATION (CC, No, Date): EP 98925690 980617; WO 98FI527 980617  
 PRIORITY (CC, No, Date): FI 972816 970630  
 DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
 LU; MC; NL; PT; SE  
 INTERNATIONAL PATENT CLASS: H04N-001/00  
 NOTE:

No A-document published by EPO  
 LANGUAGE (Publication,Procedural,Application): English; English; English  
 FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS B                           | (English) | 200301 | 866        |
| CLAIMS B                           | (German)  | 200301 | 529        |
| CLAIMS B                           | (French)  | 200301 | 692        |
| SPEC B                             | (English) | 200301 | 2553       |
| Total word count - document A      |           |        | 0          |
| Total word count - document B      |           |        | 4640       |
| Total word count - documents A + B |           |        | 4640       |

...SPECIFICATION information is also dropped by half.

Very rapid spatial luminance variations, in turn, are probably **noise**.  
 Modification components corresponding to high **frequencies** are  
 consequently reduced in many codecs by what is known as **pre - filtering**  
 to remove noise without blurring the edges of the **image**. Even strong  
 filtering does not cause the eyes as distinctly observable artefacts than  
 discarding the...

24/3,K/3 (Item 3 from file: 348)  
 DIALOG(R)File 348:EUROPEAN PATENTS  
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00875785

**Video encoder and method**  
**Videocodierer und Verfahren**  
**Codeur video et methode**  
 PATENT ASSIGNEE:

Koninklijke Philips Electronics N.V., (200769), Groenewoudseweg 1, 5621  
 BA Eindhoven, (NL), (Proprietor designated states: all)  
 INVENTOR:

Bruls, Wilhelmus Hendrikus Alfonsus, Internationaal Octrooibureau B.V.,  
 Prof. Holstlaan 6, 5656 AA Eindhoven, (NL)

LEGAL REPRESENTATIVE:

Faessen, Louis Marie Hubertus et al (19891), INTERNATIONAAL OCTROOIBUREAU  
 B.V., Prof. Holstlaan 6, 5656 AA Eindhoven, (NL)

PATENT (CC, No, Kind, Date): EP 802682 A1 971022 (Basic)  
 EP 802682 B1 020724

APPLICATION (CC, No, Date): EP 97201028 970409;

PRIORITY (CC, No, Date): BE 96331 960417

DESIGNATED STATES: AT; DE; FR; GB

INTERNATIONAL PATENT CLASS: H04N-007/50; H04N-005/926

ABSTRACT WORD COUNT: 191

NOTE:

Figure number on first page: 4

LANGUAGE (Publication,Procedural,Application): English; English; English  
 FULLTEXT AVAILABILITY:

| Available Text | Language  | Update   | Word Count |
|----------------|-----------|----------|------------|
| CLAIMS A       | (English) | 199710W3 | 609        |
| CLAIMS B       | (English) | 200230   | 710        |
| CLAIMS B       | (German)  | 200230   | 624        |
| CLAIMS B       | (French)  | 200230   | 750        |
| SPEC A         | (English) | 199710W3 | 3794       |
| SPEC B         | (English) | 200230   | 3684       |

Total word count - document A 4404  
Total word count - document B 5768  
Total word count - documents A + B 10172

...SPECIFICATION in that the controller adapts the dividing factor or the choice of I/P/B **pictures** . Alternatively, a certain **preprocessing** (not shown in Fig. 3) may be used, such as **noise** filtering or spatial **frequency** content reduction, in which the filter parameters may be adapted to influence the bit rate...

...SPECIFICATION in that the controller adapts the dividing factor or the choice of I/P/B **pictures** . Alternatively, a certain **preprocessing** (not shown in Fig. 3) may be used, such as **noise** filtering or spatial **frequency** content reduction, in which the filter parameters may be adapted to influence the bit rate...

24/3,K/4 (Item 4 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

00871514

Creation and distribution of digital documents  
Erzeugung und Verteilung digitaler Dokumente  
Creation et distribution de documents numeriques  
PATENT ASSIGNEE:

INTERNATIONAL BUSINESS MACHINES CORPORATION, (200123), , Armonk, NY  
10504, (US), (Applicant designated States: all)

INVENTOR:

Auerbach, Joshua Seth, 129 Holmes Road, Ridgefield, Connecticut 06877,  
(US)

Chow, Chee-Seng, 19030 Meiggs Lane, Cupertino, California 95014, (US)

Kaplan, Marc Adam, 14 Holly Hill Lane, Katonah, New York 10536, (US)

Crigler, Jeffrey Charles, 8601 Dixie Place, McLean, Virginia, (US)

LEGAL REPRESENTATIVE:

Waldner, Philip (84391), IBM United Kingdom Limited, Intellectual

Property Department, Hursley Park, Winchester, Hampshire SO21 2JN, (GB)

PATENT (CC, No, Kind, Date): EP 798892 A2 971001 (Basic)

EP 798892 A3 000426

APPLICATION (CC, No, Date): EP 97301307 970227;

PRIORITY (CC, No, Date): US 625475 960329

DESIGNATED STATES: DE; GB

INTERNATIONAL PATENT CLASS: H04L-009/32; G07F-007/10

ABSTRACT WORD COUNT: 205

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text | Language | Update | Word Count |
|----------------|----------|--------|------------|
|----------------|----------|--------|------------|

|          |           |        |     |
|----------|-----------|--------|-----|
| CLAIMS A | (English) | 9709W4 | 967 |
|----------|-----------|--------|-----|

|        |           |        |      |
|--------|-----------|--------|------|
| SPEC A | (English) | 9709W4 | 6402 |
|--------|-----------|--------|------|

|                               |      |
|-------------------------------|------|
| Total word count - document A | 7369 |
|-------------------------------|------|

|                               |   |
|-------------------------------|---|
| Total word count - document B | 0 |
|-------------------------------|---|

|                                    |      |
|------------------------------------|------|
| Total word count - documents A + B | 7369 |
|------------------------------------|------|

...SPECIFICATION preview", "sample", or "browse" the contents of a cryptographic envelope before the actual purchase.

Some **pre - processing** , such as compression and insertion of special string patterns, may be applied to document parts. Compression reduces storage. Other **pre - processing** are modification to the document parts to facilitate the fingerprinting and **watermarking** of document parts by the DFWM.

Control parts are the metadata needed to support the...

24/3,K/5 (Item 5 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS



00824157

Method and system for inserting a spread spectrum watermark into multimedia data

Verfahren und Vorrichtung zum Einfügen eines Spreizspektrumwasserzeichens in Multimediatdaten

Methode et systeme pour inserer un filigrane a spectre etale dans des donnees multimedia

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome Minato-ku, Tokyo, (JP),  
(applicant designated states: DE;FR;GB)

INVENTOR:

Cox, Ingemar J., 21 Le Parc Drive, Lawrenceville, NJ 08648, (US)  
Kilian, Joseph J., 18 Reed Drive North, Princeton Junction, NJ 08850,  
(US)

Shamoon, Talal G., 142A Hodge Road, Princeton, NJ 08540, (US)

LEGAL REPRESENTATIVE:

VOSSIUS & PARTNER (100314), Siebertstrasse 4, 81675 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 766468 A2 970402 (Basic)  
EP 766468 A3 990707

APPLICATION (CC, No, Date): EP 96114304 960906;

PRIORITY (CC, No, Date): US 534894 950928

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: H04N-007/08; H04N-007/26;

ABSTRACT WORD COUNT: 130

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | EPAB97 | 654        |
| SPEC A                             | (English) | EPAB97 | 7083       |
| Total word count - document A      |           |        | 7737       |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 7737       |

...SPECIFICATION somewhat higher values of  $\text{sim}(W, W^*)$  may be needed when a large number of **watermarks** are on file. The above analysis required only the independence of  $W$  from  $W^*$ , and...

...not rely on any specific properties of  $W^*$  itself. This fact provides further flexibility when **preprocessing**  $W^*$ .

The extracted **watermark**  $W^*$  may be extracted in several ways to potentially enhance the ability to extract a **watermark**. For example, experiments on images encountered instances where the average value of  $W^*$ , denoted  $E_i$ ...

...CLAIMS comparing data with watermarked data for obtaining extracted data values;

comparing extracted data values with **watermarked** values and data for obtaining difference values; and

analyzing difference values to determine the **watermark** in the **watermarked** data.

13. A method of inserting a **watermark** into data as set forth in claim 12, further comprising the step of **preprocessing** distorted or tampered **watermarked** data before said comparing data.

14. A method of inserting a **watermark** into data as set forth in claim 13, where said distorted or tampered **watermarked** data is clipped data and said **preprocessing** comprises replacing missing portions of the data with corresponding portions from original unwatermarked data.

15. A system for inserting a **watermark** into data comprising:  
providing image data;

providing **watermark** image data;

first transform lens for transforming image data passing therethrough into transformed image data;

second transform lens for transforming **watermark** image data passing therethrough into transformed watermark image data;

optical combiner for combining the transformed...

**24/3,K/6 (Item 6 from file: 348)**  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00599317

**Watermark detection**

**Detektieren von Wasserzeichen**

**Detection de filigrane**

PATENT ASSIGNEE:

The Wiggins Teape Group Limited, (247770), P.O. Box 88 Gateway House  
Basing View, Basingstoke Hampshire RG21 2EE, (GB), (applicant  
designated states: AT;BE;DE;DK;ES;FR;GB;IT;NL;SE)

INVENTOR:

Falconer, Andrew Philips, 1 Uplands, New Road, Marlow Bottom,  
Buckinghamshire SL7 3NU, (GB)  
Herdman, Peter Thomas, 157 Cressex Road, High Wycombe, Buckinghamshire  
HP12 4PZ, (GB)

LEGAL REPRESENTATIVE:

Norris, Richard John (34383), Intellectual Property Department, Arjo  
Wiggins Appleton plc, Butler's Court, Wattleton Road, Beaconsfield,  
Buckinghamshire HP9 1RT, (GB)

PATENT (CC, No, Kind, Date): EP 579461 A1 940119 (Basic)  
EP 579461 B1 971008

APPLICATION (CC, No, Date): EP 93305392 930709;

PRIORITY (CC, No, Date): GB 9214664 920710

DESIGNATED STATES: AT; BE; DE; DK; ES; FR; GB; IT; NL; SE

INTERNATIONAL PATENT CLASS: B65H-023/04;

ABSTRACT WORD COUNT: 235

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS B                           | (English) | 9710W1 | 2321       |
| CLAIMS B                           | (German)  | 9710W1 | 2131       |
| CLAIMS B                           | (French)  | 9710W1 | 2653       |
| SPEC B                             | (English) | 9710W1 | 16195      |
| Total word count - document A      |           |        | 0          |
| Total word count - document B      |           |        | 23300      |
| Total word count - documents A + B |           |        | 23300      |

...SPECIFICATION and filtering - all done by known computational algorithms  
- to extract the wanted data from the **noise** . This further processing is  
essentially a low pass **filtering** (LPF) operation performed at step 172.

Fig. 9c) illustrates the filtered and processed average row...

...corresponding to those rows incorporating portions of the letters in  
"Conqueror". In this case the **watermarking** is assumed to be more light  
transmissive than the remainder of the sheet. Similarly those...

**24/3,K/7 (Item 7 from file: 348)**  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

00569799

**A method and apparatus for noise reduction**

**Verfahren und Vorrichtung zur Gerauscherdrückung**

**Methode et dispositif de reduction du bruit**

PATENT ASSIGNEE:

Agfa-Gevaert, (200395), Septestraat 27, 2640 Mortsel, (BE), (Proprietor  
designated states: all)

INVENTOR:

Vuyksteke, Pieter, c/o Agfa-Gevaert N.V., DIE 3800, Septestraat 27,  
B-2640 Mortsel, (BE)

Dewaele, Piet, c/o Agfa-Gevaert N.V., DIE 3800, Septestraat 27, B-2640  
Mortsel, (BE)

PATENT (CC, No, Kind, Date): EP 574969 A2 931222 (Basic)  
EP 574969 A3 940413  
EP 574969 B1 020320

APPLICATION (CC, No, Date): EP 93201432 930519;

PRIORITY (CC, No, Date): EP 92201802 920619

DESIGNATED STATES: BE; DE; FR; GB; NL

INTERNATIONAL PATENT CLASS: G06T-005/20

ABSTRACT WORD COUNT: 139

NOTE:

Figure number on first page: 3B

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | EPABF1 | 1616       |
| CLAIMS B                           | (English) | 200212 | 1781       |
| CLAIMS B                           | (German)  | 200212 | 1579       |
| CLAIMS B                           | (French)  | 200212 | 2070       |
| SPEC A                             | (English) | EPABF1 | 6328       |
| SPEC B                             | (English) | 200212 | 6209       |
| Total word count - document A      |           |        | 7943       |
| Total word count - document B      |           |        | 11639      |
| Total word count - documents A + B |           |        | 19582      |

...CLAIMS increasing absolute argument values.

19. A noise reducing method according to claim 1 wherein said **digital image** is **preprocessed** in such a way that its **noise** characteristics are approximately uniform, additive, band-limited and have zero mean value.
20. A **noise** reducing method according to claim 19 wherein said **preprocessing** consists of converting pixel values of said **digital image** into the square root of said pixel values.
21. A noise reducing method according to...

...CLAIMS values.

21. A noise reducing method according to any of the preceding claims wherein the **digital image** is **preprocessed** in such a way that its **noise** characteristics are approximately uniform, additive, band-limited and have zero mean value.
22. A **noise** reducing method according to claim 21 wherein said **preprocessing** consists of converting the original pixel values into the square root of said pixel values...

24/3,K/8 (Item 8 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00520157

Detecting method and device of small objects in a natural environment

Verfahren und Anordnung zur Detektion von kleinen Objekten in natuerlicher  
Umgebung

Methode et dispositif de detection de petits objets dans un environnement  
naturel

PATENT ASSIGNEE:

LFK Lenkflugkorpersysteme GmbH, (2416940), Postfach 80 11 49, 81663  
Munchen, (DE), (Proprietor designated states: all)

INVENTOR:

Coy, Dieter, Dr.-Ing., Friedrich-Eggers-Strasse 97, W-2000 Wedel, (DE)  
Nahapetian, Vahe, Gerhart-Hauptmannstrasse 4, W-2000 Wedel, (DE)

LEGAL REPRESENTATIVE:

Hummel, Adam et al (5895), Daimler-Benz AG FTP/M Postfach 80 04 65, 81663  
Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 539653 A2 930505 (Basic)  
EP 539653 A3 941019  
EP 539653 B1 990915

APPLICATION (CC, No, Date): EP 92108926 920527;  
PRIORITY (CC, No, Date): DE 4120676 910622  
DESIGNATED STATES: DE; FR; GB; IT  
INTERNATIONAL PATENT CLASS: G06T-007/00  
TRANSLATED ABSTRACT WORD COUNT: 184  
ABSTRACT WORD COUNT: 143

NOTE:

Figure number on first page: 2

LANGUAGE (Publication,Procedural,Application): German; German; German  
FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS B                           | (English) | 9937   | 1076       |
| CLAIMS B                           | (German)  | 9937   | 864        |
| CLAIMS B                           | (French)  | 9937   | 1102       |
| SPEC B                             | (German)  | 9937   | 1957       |
| Total word count - document A      |           |        | 0          |
| Total word count - document B      |           |        | 4999       |
| Total word count - documents A + B |           |        | 4999       |

...CLAIMS the evaluation unit.

2. A procedure according to claim 1, characterised by the step of **pre - filtering the digital image** in order to smooth out **noise** from the digitalised input image.
3. A procedure according to claims 1 or 2, characterised...

**24/3,K/9 (Item 9 from file: 348)**

DIALOG(R)File 348:EUROPEAN PATENTS

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00503545

**VIDEO PROCESSING METHOD AND APPARATUS**

**VERFAHREN UND VORRICHTUNG ZUR VIDEOVERARBEITUNG**

**PROCEDE ET APPAREIL DE TRAITEMENT VIDEO**

**PATENT ASSIGNEE:**

NEW YORK INSTITUTE OF TECHNOLOGY, (201500), Wheatley Road, Old Westbury,  
New York 11568, (US), (applicant designated states: DE;FR;GB;IT;NL)

**INVENTOR:**

DHEIN, Robert, 722 Solar Isle Drive, Fort Lauderdale, FL 33301, (US)

GLASS, Gregory, 71 Park Way, Sea Cliff, NY 11579, (US)

CERULLO, Albert, 14 Chestnut Street, Glen Cove, NY 11542, (US)

SCHURE, Louis, 8 Heathcote Drive, Albertson, NY 11507, (US)

**LEGAL REPRESENTATIVE:**

Skone James, Robert Edmund et al (50281), GILL JENNINGS & EVERY Broadgate  
House 7 Eldon Street, London EC2M 7LH, (GB)

PATENT (CC, No, Kind, Date): EP 522079 A1 930113 (Basic)

EP 522079 A1 940216

EP 522079 B1 980304

WO 9115929 911017

APPLICATION (CC, No, Date): EP 91908025 910329; WO 91US2228 910329

PRIORITY (CC, No, Date): US 502519 900330; US 579146 900907

DESIGNATED STATES: DE; FR; GB; IT; NL

INTERNATIONAL PATENT CLASS: H04N-011/06; H04N-007/04; H04N-007/08;

H04N-007/12; H04N-007/18; H04N-007/00;

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS B                           | (English) | 9810   | 499        |
| CLAIMS B                           | (German)  | 9810   | 453        |
| CLAIMS B                           | (French)  | 9810   | 561        |
| SPEC B                             | (English) | 9810   | 6595       |
| Total word count - document A      |           |        | 0          |
| Total word count - document B      |           |        | 8108       |
| Total word count - documents A + B |           |        | 8108       |

...SPECIFICATION vertical sampling rates  $(f_h)/2, (f_v)/2$ ). It is analogous to the one-dimensional decimation **spectrum** except that **frequencies** are two-dimensional. An **image** to be decimated can be first passed through a two-dimensional diagonal **pre - filter** of the type previously described. The decimated spectrum is obtained by convolving the filtered image...

...filter.

Fig. 15D is a representation of a two-dimensional frequency spectrum of a decimated **image** which is composed of repetitions of the cardinally-sampled **spectrum** about multiples of the decimating **frequency**, i.e. at for all integral values of  $m$  and  $n$ .

Frequency aliasing will occur if the **image** is not properly **pre - filtered** and likewise, if the zero-padded reconstruction is not adequately post-filtered. Fig. 15E shows...

24/3,K/10 (Item 10 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00434541

Colour television camera

Farbfernsehkamera

Camera de television en couleurs

PATENT ASSIGNEE:

SONY CORPORATION, (214022), 7-35, Kitashinagawa 6-chome Shinagawa-ku, Tokyo, (JP), (applicant designated states: DE;FR;GB)

INVENTOR:

Asaida, Takashi, c/o Sony Corporation, 7-35 Kitashinagawa 6-chome, Shinagawa-ku, Tokyo, (JP)

Miyamoto, Kazuyoshi, c/o Sony Corporation, 7-35 Kitashinagawa 6-chome, Shinagawa-ku, Tokyo, (JP)

LEGAL REPRESENTATIVE:

Ayers, Martyn Lewis Stanley et al (42851), J.A. KEMP & CO. 14 South Square Gray's Inn, London WC1R 5LX, (GB)

PATENT (CC, No, Kind, Date): EP 420612 A2 910403 (Basic)

EP 420612 A3 911211

EP 420612 B1 960103

APPLICATION (CC, No, Date): EP 90310535 900926;

PRIORITY (CC, No, Date): JP 89249836 890926; JP 89278206 891025

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: H04N-009/64; H04N-009/04;

ABSTRACT WORD COUNT: 184

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text | Language | Update | Word Count |
|----------------|----------|--------|------------|
|----------------|----------|--------|------------|

|          |           |        |      |
|----------|-----------|--------|------|
| CLAIMS B | (English) | EPAB96 | 1143 |
|----------|-----------|--------|------|

|          |          |        |      |
|----------|----------|--------|------|
| CLAIMS B | (German) | EPAB96 | 1013 |
|----------|----------|--------|------|

|          |          |        |      |
|----------|----------|--------|------|
| CLAIMS B | (French) | EPAB96 | 1459 |
|----------|----------|--------|------|

|        |           |        |      |
|--------|-----------|--------|------|
| SPEC B | (English) | EPAB96 | 7337 |
|--------|-----------|--------|------|

|                               |   |
|-------------------------------|---|
| Total word count - document A | 0 |
|-------------------------------|---|

|                               |       |
|-------------------------------|-------|
| Total word count - document B | 10952 |
|-------------------------------|-------|

|                                    |       |
|------------------------------------|-------|
| Total word count - documents A + B | 10952 |
|------------------------------------|-------|

...SPECIFICATION The broad range digital luminance signal may be formed from the 2fs rate three color **digital image** pickup signal at the luminance signal forming means at a rate equal to 2fs.

The color difference signal generating means processes the 2fs rate three prime color **digital image** pickup signal from the image pickup signal generating means by down-sampling to the rate fs by means of a **pre - filter** having a zero point at least the **frequency** fs to produce the fs-rate digital color difference signal.

The fs-rate modulated color...

...CLAIMS said colour difference signal forming means (8) samples down the 2fs rate three primary colour **digital image** pickup signals (DR\*\*,DG\*\*,DB\*\*) output from said first rate converting means to the

fs rate by means of a **pre - filter** having a zero point at least the **frequency** fs for forming the fs rate digital colour difference signal.

3. A colour television camera...

24/3,K/11 (Item 11 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00430224

**Spatial filter system.**

**Raumfiltersystem.**

**Système de filtre spatial.**

PATENT ASSIGNEE:

ANALOGIC CORPORATION, (561922), 8 Centennial Drive, Peabody Massachusetts 01960, (US), (applicant designated states: DE;FR;GB)

INVENTOR:

Dolazza, Enrico, 167 Marlboro Street, Boston, Massachusetts 02116, (US)

LEGAL REPRESENTATIVE:

Jones, Graham H. (32431), Graham Jones & Company 77 Beaconsfield Road Blackheath, London SE3 7LG, (GB)

PATENT (CC, No, Kind, Date): EP 432862 A2 910619 (Basic)  
EP 432862 A3 920930

APPLICATION (CC, No, Date): EP 90302328 900305;

PRIORITY (CC, No, Date): US 448917 891212

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: G06F-015/68;

ABSTRACT WORD COUNT: 76

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | EPABF1 | 184        |
| SPEC A                             | (English) | EPABF1 | 3126       |
| Total word count - document A      |           |        | 3310       |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 3310       |

...SPECIFICATION enhancement of the high frequency noise introduced by the TV camera, as well as other **noise** sources, not **prefiltered** by point spread function of the x-ray/optical chain.

As taught by this invention, when a **digital** diagnostic **image** should be filtered for enhancement of its medium/high frequency components, using a large size...

24/3,K/12 (Item 12 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2004 European Patent Office. All rts. reserv.

00426365

**Adaptive comb filter.**

**Adaptiver Kammfilter.**

**Filtre en peigne adaptatif.**

PATENT ASSIGNEE:

MITSUBISHI DENKI KABUSHIKI KAISHA, (208580), 2-3, Marunouchi 2-chome Chiyoda-ku, Tokyo 100, (JP), (applicant designated states: DE;GB;NL)

INVENTOR:

Tokumichi, Murakami, Mitsubishi Denki K.K., Infor., Systems and Electr. Dev. Lab, No. 325 Kamimachiya, Kamakura-shi, Kanagawa, (JP)

Atsushi, Ito, Mitsubishi Denki K.K., Information, Systems and Electr.

Dev. Lab, No. 325 Kamimachiya, Kamakura-shi, Kanagawa, (JP)

Kataro, Asai, Mitsubishi Denki K.K., Information, Systems and Electr.

Dev. Lab, No. 325 Kamimachiya, Kamakura-shi, Kanagawa, (JP)

LEGAL REPRESENTATIVE:

Lehn, Werner, Dipl.-Ing. et al (7471), Hoffmann, Eitle & Partner, Patentanwälte, Postfach 81 04 20, D-81904 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 424989 A2 910502 (Basic)  
EP 424989 A3 911002  
EP 424989 B1 950705  
APPLICATION (CC, No, Date): EP 90124196 841221;  
PRIORITY (CC, No, Date): JP 83242367 831222; JP 8421147 840208; JP 8482506  
840424; JP 84123089 840615  
DESIGNATED STATES: DE; GB; NL  
RELATED PARENT NUMBER(S) - PN (AN):  
EP 149214 (EP 841160971)  
INTERNATIONAL PATENT CLASS: H04N-009/78; H04N-007/12;  
ABSTRACT WORD COUNT: 85

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | EPABF1 | 2145       |
| CLAIMS B                           | (English) | EPAB95 | 437        |
| CLAIMS B                           | (German)  | EPAB95 | 381        |
| CLAIMS B                           | (French)  | EPAB95 | 500        |
| SPEC A                             | (English) | EPABF1 | 8596       |
| SPEC B                             | (English) | EPAB95 | 8037       |
| Total word count - document A      |           |        | 10742      |
| Total word count - document B      |           |        | 9355       |
| Total word count - documents A + B |           |        | 20097      |

...SPECIFICATION frequency f( sub(s)) by the A/D converter D-2 and converted into a **digital** input **picture** signal D-3. This **digital** input **picture** signal D-3 is subjected to suppression of high frequency components to be folded back on the low **frequency** components by the **prefilter** D-4 and is then subnyquist sampled as shown in Fig. 9 in the subsampler...

...to interpolation of picture elements extracted by the interpolation filter D-8, converted to a **digital** recovered **picture** signal D-9, and then converted to an analog recovered picture signal D-11 by...

...SPECIFICATION frequency f( sub(s)) by the A/D converter D-2 and converted into a **digital** input **picture** signal D-3. This **digital** input **picture** signal D-3 is subjected to suppression of high frequency components to be folded back on the low **frequency** components by the **prefilter** D-4 and is then subnyquist sampled as shown in Fig. 9 in the subsampler...

...to interpolation of picture elements extracted by the interpolation filter D-8, converted to a **digital** recovered **picture** signal D-9, and then converted to an analog recovered picture signal D-11 by...

24/3,K/13 (Item 13 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

00239415

**Speech recognition system.**

**Spracherkennungssystem.**

**Système pour la reconnaissance de la parole.**

PATENT ASSIGNEE:

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Kawasaki-shi Kanagawa-ken, (JP), (applicant designated states:  
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Nitta, Tsuneo, 202-3 Kajigaya-cho Sakae-ku, Yokohama-shi Kanagawa-ken,  
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Watanabe, Sadakazu, 708-132 Ozenji, Asao-ku, Kawasaki-shi Kanagawa-ken,  
(JP)

LEGAL REPRESENTATIVE:

Lehn, Werner, Dipl.-Ing. et al (7471), Hoffmann, Eitle & Partner

Patentanwalte Arabellastrasse 4, W-8000 Munchen 81, (DE)  
PATENT (CC, No, Kind, Date): EP 237934 A1 870923 (Basic)  
EP 237934 B1 920108  
APPLICATION (CC, No, Date): EP 87103477 870311;  
PRIORITY (CC, No, Date): JP 8659505 860319  
DESIGNATED STATES: DE; FR; GB  
INTERNATIONAL PATENT CLASS: G10L-005/06;  
ABSTRACT WORD COUNT: 123

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS B                           | (English) | EPBBF1 | 2440       |
| CLAIMS B                           | (German)  | EPBBF1 | 1278       |
| CLAIMS B                           | (French)  | EPBBF1 | 1766       |
| SPEC B                             | (English) | EPBBF1 | 5543       |
| Total word count - document A      |           |        | 0          |
| Total word count - document B      |           |        | 11027      |
| Total word count - documents A + B |           |        | 11027      |

...SPECIFICATION from (a( sub(i))). In this case, the frequency axis is transformed into a melmeasure ( a scale corresponding to human hearing sense) as follows: (see **image** in original document)  
where f( sub (s)) denotes the sampling **frequency** .  
Fig. 2 shows a sonograph of this power vector (P( sub(i))) obtained when "8...

**24/3,K/14 (Item 14 from file: 348)**  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

00224747

**Image signal processor.**

**Bildsignalverarbeitungsgerat.**

**Appareil de traitement d'un signal image.**

PATENT ASSIGNEE:

MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD., (216883), 1006, Oaza Kadoma,  
Kadoma-shi, Osaka-fu, 571, (JP), (applicant designated states:  
DE;FR;GB)

INVENTOR:

Mori, Toshiki, 1-15-13 Yamatedai, Ibaraki Osaka 567, (JP)  
Yamada, Haruyasu, 1-27-10 Shodai-minami-machi, Hirakata Osaka 573, (JP)  
Aono, Kunitoshi, 1-2-48 Higashikori, Hirakata Osaka 573, (JP)  
Maruyama, Masakatsu, 46-4-203 Yamadaike-higashi-machi, Hirakata Osaka  
573-01, (JP)

LEGAL REPRESENTATIVE:

Crawford, Andrew Birkby et al (29761), A.A. THORNTON & CO. Northumberland  
House 303-306 High Holborn, London WC1V 7LE, (GB)

PATENT (CC, No, Kind, Date): EP 227406 A2 870701 (Basic)  
EP 227406 A3 900207  
EP 227406 B1 930217

APPLICATION (CC, No, Date): EP 86309788 861216;  
PRIORITY (CC, No, Date): JP 85283308 851216; JP 86217446 860916  
DESIGNATED STATES: DE; FR; GB  
INTERNATIONAL PATENT CLASS: G06F-015/68;  
ABSTRACT WORD COUNT: 63

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS B                           | (English) | EPABF1 | 455        |
| SPEC B                             | (English) | EPABF1 | 3905       |
| Total word count - document A      |           |        | 0          |
| Total word count - document B      |           |        | 4360       |
| Total word count - documents A + B |           |        | 4360       |

...SPECIFICATION by, generally, a video camera, whose image output is then



digitized. In this case, the **digitized image** includes random **noise** due to camera characteristics and light reflection. Therefore, **preprocessing** is used to remove the unwanted **noise** component. After this processing, features are extracted from the **preprocessed** image signal and, thereafter, the extracted features are used to identify the object which was...

24/3,K/15 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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01098410 \*\*Image available\*\*

**METHOD AND APPARATUS FOR EXTRACTING INDICES OF A 2D RADIOGRAPHIC IMAGE OF A BONE REGION PRESENTING A TRABECULAR MICROARCHITECTURE**  
**PROCEDE ET APPAREIL D'EXTRACTION D'INDICES D'UNE IMAGE RADIOGRAPHIQUE 2D D'UNE REGION OSSEUSE PRESENTANT UNE MICRO-ARCHITECTURE TRABECULAIRE**

Patent Applicant/Assignee:

INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE, 101, rue de Tolbiac, F-75654 Paris Cedex 13, FR, FR (Residence), FR (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

LEMINEUR Gerald, 27, rue de Lahire, F-45000 Orleans, FR, FR (Residence), FR (Nationality), (Designated only for: US)

BRUNET-IMBAULT Barbara, 11, rue Pothier, F-45000 Orleans, FR, FR (Residence), FR (Nationality), (Designated only for: US)

BENHAMOU Claude-Laurent, 34, rue de Coulmiers, F-45000 Orleans, FR, FR (Residence), FR (Nationality), (Designated only for: US)

Legal Representative:

LA BIGNE Guillaume (agent), Cabinet Lhermet La Bigne & Remy, 191, rue Saint-Honore, F-75001 Paris, FR,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200421247 A1 20040311 (WO 0421247)

Application: WO 2002IB3810 20020830 (PCT/WO IB02003810)

Priority Application: WO 2002IB3810 20020830

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

CA JP US

Publication Language: English

Filing Language: English

Fulltext Word Count: 2690

Fulltext Availability:

Detailed Description

Detailed Description

... on figure 5, comprises a first filtering step 30.

During this first step 30, the **image** 10 is **prefiltered** in order to eliminate the low **frequency noise**. The low **frequency noise** is indeed principally due to the radiological variability, such as X-ray intensity variations, illumination...

24/3,K/16 (Item 2 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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01053402 \*\*Image available\*\*

**AUTOMATED INSPECTION AND PROCESSING SYSTEM**  
**SYSTEME DE TRAITEMENT ET D'INSPECTION AUTOMATISE**

Patent Applicant/Assignee:

GEO-CENTERS INC, 1801 Rockville Pike, Suite 405, Rockville, MD 20852-1633, US, US (Residence), US (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

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(Residence), US (Nationality), (Designated only for: US)  
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Legal Representative:

MORRIS James H (agent), Wolf, Greenfield & Sacks, P.C., 600 Atlantic  
Avenue, Boston, MA 02210, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200383460 A1 20031009 (WO 0383460)  
Application: WO 2003US8981 20030324 (PCT/WO US0308981)  
Priority Application: US 2002367221 20020325

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

JP US

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR

Publication Language: English

Filing Language: English

Fulltext Word Count: 12088

Fulltext Availability:

Detailed Description

Detailed Description

... in any implementation may depend on the type i 5 of noise present in  
the **images** collected from a particular inspection system. Gaussian  
smoothing, median filtering or other methods of removing **noise** and high  
**frequency** content may be employed during **preprocessing** in the place  
of or in combination with a wavelet transformation.

After the **image** has been preprocessed, the image is introduced to a  
feature 2o detection phase 3000b. It...

24/3,K/17 (Item 3 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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01039588 \*\*Image available\*\*

ROCK FRAGMENTATION ANALYSIS SYSTEM

SYSTEME D'ANALYSE DE FRAGMENTATION DE ROCHES

Patent Applicant/Assignee:

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Tower, Toronto-Dominion Centre, Toronto, Ontario M5K 1N4, CA, CA  
(Residence), CA (Nationality)

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, CA,  
MANN George K I, 132 Virginia Street, Apt. 204, Kingston, Ontario K7K 5Y4  
, CA,

Legal Representative:

McGRAW James (et al) (agent), Smart & Biggar, 900 - 55 Metcalfe Street,  
P.O. Box 2999, Station D, Ottawa, Ontario K1P 5Y6, CA,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200369561 A2-A3 20030821 (WO 0369561)  
Application: WO 2002CA1835 20021129 (PCT/WO CA02001835)  
Priority Application: US 200277101 20020215

Designated States:

(Protection type is "patent" unless otherwise stated - for applications

prior to 2004)  
AU CA FI MX NO SE  
Publication Language: English  
Filing Language: English  
Fulltext Word Count: 11865

Fulltext Availability:  
Detailed Description

Detailed Description

... produce fault edges which result in a disintegration of the rock surfaces in the blob **image** . As edge detection is based on neighborhood pixel intensity differences, the available algorithms are sensitive to high **frequency noise** and require **image preprocessing** for

24/3,K/18 (Item 4 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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01014809 \*\*Image available\*\*

GENERATING REPLACEMENT DATA VALUES FOR AN IMAGE REGION

PRODUCTION DE VALEURS DE DONNEES DE REMPLACEMENT POUR UNE REGION D'IMAGE

Patent Applicant/Assignee:

ADOBE SYSTEMS INCORPORATED, 345 Park Avenue, San Jose, CA 95110, US, US  
(Residence), US (Nationality)

Inventor(s):

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CHIEN Jen-Chan, 7672 Shadowhill Lane, Cupertino, CA 95014, US,  
HAMBURG Mark, 108 Baja Sol Drive, Scotts Valley, CA 95066, US,

Legal Representative:

TROESCH Hans R (agent), Fish & Richardson P.C., 500 Arguello Street #500,  
Redwood City, CA 94063, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200344739 A1 20030530 (WO 0344739)  
Application: WO 2002US36594 20021113 (PCT/WO US0236594)  
Priority Application: US 2001991254 20011116

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

CA JP

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR

Publication Language: English

Filing Language: English

Fulltext Word Count: 9137

Fulltext Availability:  
Detailed Description

Detailed Description

... the current level mask) several times (e.g., four loops through the whole current level **image** ) to effect this slight blurring. The **pre-processing** blur removes any very high **frequency noise** and can help prevent small color artifacts in the resulting healed **image** .

[00751 Once all the levels have been processed, texture data is added to the modification...

24/3,K/19 (Item 5 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
(c) 2004 WIPO/Univentio. All rts. reserv.

00872953 \*\*Image available\*\*

METHOD AND APPARATUS FOR MODELING VIA A THREE-DIMENSIONAL IMAGE MOSAIC SYSTEM

PROCEDE ET APPAREIL DE MODELISATION VIA UN SYSTEME MOSAIQUE D'IMAGERIE TRIDIMENSIONNELLE

Patent Applicant/Assignee:

GENEX TECHNOLOGIES INC, 10605 Concord Street, No. 500, Kensington, MD  
20895, US, US (Residence), US (Nationality), (For all designated states  
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Patent Applicant/Inventor:

GENG Zheng Jason, 1101 Sugarbush Terrace, Rockville, MD 20852, US, US  
(Residence), US (Nationality), (Designated only for: US)

Legal Representative:

COPPOLA Joseph V Sr (et al) (agent), Rader, Fishman & Grauer PLLC, 39533  
Woodward Avenue, Suite 140, Bloomfield Hills, MI 48304, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200207093 A2-A3 20020124 (WO 0207093)  
Application: WO 2001US22340 20010717 (PCT/WO US0122340)  
Priority Application: US 2000617867 20000717

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ  
EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS  
LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ  
TM TR TT TZ UA UG US UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 5839

Fulltext Availability:

Detailed Description

Detailed Description

... the

20 same mask, the wavelet decomposition process provides a  
multiple resolution representation of an **image** in both the  
spatial and frequency domains. Because noise in the **image** is  
usually at a high frequency, removing the high **frequency**  
wavelets will effectively remove the **noise**.

7

Regardless of which, if any, **pre - processing** operations  
are conducted on the selected 3D **image**, the 3D **image** then  
undergoes an **image** alignment step 206. Because the inventive  
system does not rely upon camera position information or...

24/3,K/20 (Item 6 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00471045 \*\*Image available\*\*

VIDEO IMAGE BAND ADJUSTMENT METHOD, AND FILTER ARRANGEMENT

PROCEDE D'AJUSTEMENT DE LA BANDE D'IMAGES VIDEO ET AGENCEMENT DE FILTRE

Patent Applicant/Assignee:

ELEKTROBIT OY,  
MUSTONEN Juha,  
SILVEN Olli,

Inventor(s):

MUSTONEN Juha,  
SILVEN Olli,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9901979 A2 19990114  
Application: WO 98FI527 19980617 (PCT/WO FI9800527)  
Priority Application: FI 972816 19970630

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GE GH GM GU HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV  
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA  
UG US UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM  
AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM  
GA GN ML MR NE SN TD TG

Publication Language: English  
Fulltext Word Count: 3625

Fulltext Availability:  
Detailed Description

Detailed Description  
... information is also dropped by half.

Very rapid spatial luminance variations, in turn, are probably **noise** .

Modification components corresponding to high **frequencies** are  
consequently  
reduced in many codecs by what is known as **pre - filtering** to remove  
noise  
without blurring the edges of the **image** . Even strong

24/3,K/21 (Item 7 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00421031 \*\*Image available\*\*

**AUTHENTICATION OF SIGNALS USING WATERMARKS**  
**AUTHENTICATION DE SIGNAUX A L'AIDE DE FILIGRANES**

Patent Applicant/Assignee:

PURDUE RESEARCH FOUNDATION,  
WOLFGANG Raymond B,  
DELP Edward J III,

Inventor(s):

WOLFGANG Raymond B,  
DELP Edward J III,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9811492 A1 19980319  
Application: WO 97US16237 19970912 (PCT/WO US9716237)  
Priority Application: US 9625589 19960913; US 9737182 19970203

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

JP US AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Fulltext Word Count: 12970

Fulltext Availability:

Detailed Description

Detailed Description  
... m-sequence) to the pixel data.

They identify the watermark using correlation  
techniques 2,3]. **Watermarks** can also modify the  
image's spectral or transform coefficients directly.

These algorithms most...

...DCT

9

coefficients according to a sequence known only  
to the owner [4]. A different **spectrum** -based  
technique passes the image through a sub-band  
**filter** before marking an image [5]. Many of these  
watermarking techniques depend on the image  
content; the techniques increase the level of the

**watermark** in the image while maintaining the imperceptibility of the mark [6,7]. Other **watermarks** also use the Human Visual System [8]. Visible **watermarks** also exist; IBM has developed...

24/3,K/22 (Item 8 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00412403

OPTIMIZATION METHODS FOR THE INSERTION, PROTECTION AND DETECTION OF DIGITAL  
WATERMARKS IN DIGITIZED DATA  
METHODES POUR OPTIMISER L'INSERTION, LA PROTECTION ET LA DETECTION DES  
FILIGRANES NUMERIQUES DANS DES DONNEES NUMERISEES

Patent Applicant/Assignee:

THE DICE COMPANY,

Inventor(s):

MOSKOWITZ Scott A,

COOPERMAN Marc S,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9802864 A1 19980122

Application: WO 97US11455 19970702 (PCT/WO US9711455)

Priority Application: US 96677435 19960702

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AU BR CN JP AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE

IT LU MC NL PT SE

Publication Language: English

Fulltext Word Count: 11521

Fulltext Availability:

Detailed Description

Detailed Description

... and interleaving,

such as the Cross-interleave Reed-Solomon Code. Using such codes to store **watermark** information in the signal increases the number of changes required to obliterate a given **watermark**. **Preprocessing** the certificate by considering **error** correction and the introduction of random data to make

**watermark** discovery more difficult, prior to **watermarking**, will help determine sufficient key size. More generally, absolute key size can be 12

determined through preprocessing the message and the actual digital

**watermark** (a file including information regarding the copyright owner, publisher, or some other party in the...boost momentary S/E ratio and give a better

estimate of not removing keys and **watermarks** that may be subsequently determined to be "errors."

Given a particular digital content signal, parity, interleaving, delay, and cross-interleaving, used for **error** correction, should be taken into account when **preprocessing** information to compute absolute size requirements of the encoded bit stream and limiting or adjusting...

...addition, these techniques minimize the impact of errors and are thus valuable in creating robust **watermarks**.

2 6

Uncorrected errors can be concealed in digital systems.

Concealment offers a different dynamic...

24/3,K/23 (Item 9 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT

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00393648      **\*\*Image available\*\***

**WATERMARKING PROCESS RESILIENT TO COLLUSION ATTACKS**

**PROCEDE D'APPLICATION DE FILIGRANE EFFICACE CONTRE LES COPIES ILLICITES**

Patent Applicant/Assignee:

LEIGHTON Frank Thomson,

Inventor(s):

LEIGHTON Frank Thomson,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9734391 A1 19970918

Application: WO 97US3816 19970312 (PCT/WO US9703816)

Priority Application: US 96615534 19960312; US 96679863 19960715

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AU CA JP US AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Fulltext Word Count: 4904

Fulltext Availability:

Detailed Description

Detailed Description

... of data either as part of the

inventive technique or through some known A/D **preprocessing**. In the invention, there is a "baseline" **watermark** that is preferably stored and not used in making a particular copy of the work (although this step is not necessarily required). This baseline **watermark** is then processed to create a set of one or more "modified" **watermarks**, each of which is related to the baseline watermark in a predetermined manner. Preferably, the...

24/3,K/24      (Item 10 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00385990

**METHOD FOR AN ENCRYPTED DIGITAL WATERMARK**

**PROCEDE RELATIF A UN FILIGRANE NUMERIQUE CODE**

Patent Applicant/Assignee:

THE DICE COMPANY,

Inventor(s):

COOPERMAN Marc,

MOSKOWITZ Scott A,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9726733 A1 19970724

Application: WO 97US652 19970117 (PCT/WO US9700652)

Priority Application: US 96587944 19960117

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AL AU BA BB BG BR CA CN CU CZ EE GE HU IL IS JP KP KR LC LK LR LT LV MG

MK MN MX NO NZ PL RO SG SI SK TR TT UA UZ VN KE LS MW SD SZ UG AM AZ BY

KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF

BJ CF CG CI CM GA GN ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 6499

Fulltext Availability:

Detailed Description

Detailed Description

... bits of the key to

the content stream, FILTER - a function which describes how to **pre - filter** the content signal, prior to encoding or decoding, CIPHER - a function which provides encryption and decryption services for information

contained in the **watermark** , and ERRCODE - a function which further encodes/decodes **watermark** information so that errors introduced into a **watermark** may be corrected after extraction from the content signal.

Additionally, a new method of synchronizing...

...can succeed in destroying the marker. A new method is implemented in which the encoder **pre - processes** the digital sample stream, calculating where **watermark** information will be encoded. As it is doing this, it notes the starting position of each complete **watermark** , and records to a file, a sequence of N-bits representing sample information corresponding to the start of the **watermark** , for instance, the 3rd most significant bit of the 256 samples immediately preceding the start...precise control of digital signals, "embedded" or otherwise, that can be purely manipulated in the **frequency** domain. Such software provides for bandpass **filtering** and **noise** elimination options that may be directed at specific ranges of the frequency domain, a ripe method for attack in order to hamper recovery of **watermark** information encoded in specific frequency ranges.

Separating the decoder from the encoder can limit the...

24/3,K/25 (Item 11 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00198571 \*\*Image available\*\*

**VIDEO PROCESSING METHOD AND APPARATUS**  
**PROCEDE ET APPAREIL DE TRAITEMENT VIDEO**

Patent Applicant/Assignee:

NEW YORK INSTITUTE OF TECHNOLOGY,

Inventor(s):

DHEIN Robert,  
GLASS Gregory,  
CERULLO Albert,  
SCHURE Louis,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9115929 A1 19911017

Application: WO 91US2228 19910329 (PCT/WO US9102228)

Priority Application: US 90519 19900330; US 90146 19900907

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AT BE CA CH DE DK ES FR GB GR IT JP LU NL SE

Publication Language: English

Fulltext Word Count: 13346

Fulltext Availability:

Detailed Description

Detailed Description

... sampling rates ( $f_h/2, f_v/2$ ). It is analogous to the one-dimensional decimation **spectrum** except that **frequencies** are two-dimensional. An **image** to be decimated can be first passed through a two-dimensional diagonal **pre - filter** of the type previously described. The decimated spectrum is obtained by convolving the filtered image...

24/3,K/26 (Item 12 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT



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00161426      \*\*Image available\*\*

**QUALIFICATION SYSTEM FOR PRINTED IMAGES**

**SYSTEME DE QUALIFICATION D'IMAGES D'IMPRIMEES**

Patent Applicant/Assignee:

DERSTINE Christine,

NALLY Robert B,

Inventor(s):

NALLY Robert B,

Patent and Priority Information (Country, Number, Date):

Patent:                      WO 8907804 A1 19890824

Application:                WO 89US515 19890209 (PCT/WO US8900515)

Priority Application: GB 882940 19880209

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AT BE CH DE FR GB IT LU NL SE

Publication Language: English

Fulltext Word Count: 6410

Fulltext Availability:

Detailed Description

Detailed Description

... sensor.

In the embodiment shown in Figure 1B, the PIRL operates on a digitized magnetic **image** stored in a digital buffer memory. The **image** data is **pre - processed** in an **image** filtering and thresholding processor 21 to remove electrical **noise** and unwanted **frequency** components. The optical **image** is also processed here to enhance and sharpen the image and remove background information.

Next...

24/3,K/27      (Item 13 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00123828

**IMPROVED SYSTEM FOR CORING AN IMAGE-REPRESENTING SIGNAL**

**SYSTEME AMELIORE DE "NOYAUTAGE" D'UN SIGNAL REPRESENTANT UNE IMAGE**

Patent Applicant/Assignee:

RCA CORPORATION,

Inventor(s):

CARLSON Curtis Raymond,

ADELSON Edward Howard,

ANDERSON Charles Hammond,

Patent and Priority Information (Country, Number, Date):

Patent:                      WO 8502081 A1 19850509

Application:                WO 84US1690 19841022 (PCT/WO US8401690)

Priority Application: GB 8329109 19831101

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AT AU DE FI FR GB JP KR SE

Publication Language: English

Fulltext Word Count: 10192

Fulltext Availability:

Detailed Description

Detailed Description

... form of a

conventional video signal (e.g, an NTSC video signal)  
defining the spatial **frequency spectrum** of successively  
scanned two-dimensional television **images** , which video  
10  
signal first has been **prefiltered** to remove any component  
thereof representing a spatial frequency higher than a  
given maximum spatial...

| Set | Items   | Description   |
|-----|---------|---|
| S1  | 15576   | LAPLACE OR SIGNUM OR (FAST OR DIGITAL) ( ) FOURIER ( ) TRANSFORM?<br>OR FFT OR DFT OR FOURIER ( ) TRANSFORM?  |
| S2  | 4565    | (DIGITAL OR ELECTRONIC) (2W) (WATERMARK? OR WATER ( ) MARK?) OR<br>WATERMARK? OR WATER ( ) MARK? OR TRANSLUCENT ( ) DESIGN?   |
| S3  | 2842272 | FILTER? OR LOOKUP OR LOOK ( ) UP OR SEARCH? OR SEEK? OR QUER?<br>OR MATCH? OR QUEST? OR PURSU? OR FIND? OR RETRIEV? OR EXTRACT?<br>OR SEPARATE? OR DIFFERENTIAT? OR SCREEN? OR PREFILTER? OR PR-<br>E ( ) FILTER? |
| S4  | 2833407 | DETECT? OR DETERMIN? OR DECID? OR RESOLV? OR ASCERTAIN? OR<br>RECOGNI?  |
| S5  | 55      | S1 AND S2   |
| S6  | 18      | S5 AND S3   |
| S7  | 10      | S6 AND S4   |
| S8  | 8       | S5 AND IC=H04L?   |

File 347:JAPIO Nov 1976-2004/Apr(Updated 040802)  
(c) 2004 JPO & JAPIO

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200451  
(c) 2004 Thomson Derwent

| Set  | Items                               | Description   |
|------|-------------------------------------|---|
| S1   | 275123                              | LAPLACE OR SIGNUM OR (FAST OR DIGITAL) ( ) FOURIER ( ) TRANSFORM?<br>OR FFT OR DFT OR FOURIER ( ) TRANSFORM?  |
| S2   | 10145                               | (DIGITAL OR ELECTRONIC) (2W) (WATERMARK? OR WATER ( ) MARK?) OR<br>WATERMARK? OR WATER ( ) MARK? OR TRANSLUCENT ( ) DESIGN?   |
| S3   | 4303797                             | FILTER? OR LOOKUP OR LOOK ( ) UP OR SEARCH? OR SEEK? OR QUER?<br>OR MATCH? OR QUEST? OR PURSU? OR FIND? OR RETRIEV? OR EXTRACT?<br>OR SEPARATE? OR DIFFERENTIAT? OR SCREEN? OR PREFILTER? OR PR-<br>E ( ) FILTER? |
| S4   | 4668682                             | DETECT? OR DETERMIN? OR DECID? OR RESOLV? OR ASCERTAIN? OR<br>RECOGNI?  |
| S5   | 338                                 | S1 AND S2   |
| S6   | 137                                 | S5 AND S3   |
| S7   | 74                                  | S6 AND S4   |
| S8   | 0                                   | S7 NOT PY>1995  |
| File | 8: Ei Compendex(R)                  | 1970-2004/Aug W1<br>(c) 2004 Elsevier Eng. Info. Inc.   |
| File | 35: Dissertation Abs Online         | 1861-2004/May<br>(c) 2004 ProQuest Info&Learning  |
| File | 202: Info. Sci. & Tech. Abs.        | 1966-2004/Jul 12<br>(c) 2004 EBSCO Publishing   |
| File | 65: Inside Conferences              | 1993-2004/Aug W2<br>(c) 2004 BLDSC all rts. reserv.   |
| File | 2: INSPEC                           | 1969-2004/Aug W1<br>(c) 2004 Institution of Electrical Engineers  |
| File | 233: Internet & Personal Comp. Abs. | 1981-2003/Sep<br>(c) 2003 EBSCO Pub.  |
| File | 94: JICST-EPlus                     | 1985-2004/Jul W3<br>(c) 2004 Japan Science and Tech Corp (JST)  |
| File | 99: Wilson Appl. Sci & Tech Abs     | 1983-2004/Jul<br>(c) 2004 The HW Wilson Co.   |
| File | 95: TEME-Technology & Management    | 1989-2004/Jun W1<br>(c) 2004 FIZ TECHNIK  |
| File | 239: Mathsci                        | 1940-2004/Sep<br>(c) 2004 American Mathematical Society   |
| File | 583: Gale Group Globalbase(TM)      | 1986-2002/Dec 13<br>(c) 2002 The Gale Group   |